

# MARINE RECORD

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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## THE WORLD'S NAVIES.

Capt. Charles D. Sigsbee, U. S. N., at present Chief of the Office of Naval Intelligence, has made public that bureau's annual publication entitled "Notes on Naval Progress," which sets forth the advance that has been made in naval work among the foreign navies.

A noteworthy statement is that the new German battle fleet will be practically complete when the vessels laid down in 1905 are completed, instead of in 1916, as formerly proposed. Vessels laid down after 1905 will be either for foreign service or for the non-active fleet.

The subject of wireless telegraphy, as bearing on naval progress, is treated at length, and it is stated that great progress has been made with this new means of communication abroad during the past year, particularly in increasing the distances over which messages can be sent and in providing means to guard against confusion where messages cross one another. It is shown that the British, French, German, Japanese, Russian, Italian, Spanish and Swedish navies have adopted wireless telegraphy to a greater or less extent.

To give an idea of the fighting strength of the seven principal navies of the world, a table is submitted, showing the following total tonnage of ships built, building and to be built: England, 1,766,855; France, 781,065; Russia, 552,546; United States, 507,494; Germany, 458,482; Italy, 322,707; Japan, 251,493.

Naval appropriations for the present fiscal year are stated as follows: England, \$149,755,620, an increase of over \$10,000,000 as compared with last year; France, \$63,244,658; Russia, \$50,005,297, an increase of over \$5,000,000; Germany, \$46,822,732; Italy, \$23,703,595; Japan, \$18,577,633 and Spain, \$3,860,000, to be devoted almost exclusively to shipbuilding.

## SHIP CANALS OF RUSSIA.

The proposed ship canal between St. Petersburg and the White Sea, engineering plans of which have been approved by the Minister of Communication, is to be commenced in June of this year. In brief, the plans are as follows: The naval port of Cronstadt (the entrance to St. Petersburg) is to be connected with the new naval harbor Sorotskaja, on the White Sea, by a canal of sufficient breadth and depth to admit the passage of Russia's largest cruisers. The extreme depth will be 31 feet, while the water surface will have a breadth of 200 feet. The length of the canal will be 963 kilometers, and it will pursue the following course: From the River Neva to Lake Ladoga; across the lake to Svir river,

and the entire length of this stream to Lake Onega; due north through a new canal to Sego Lake; again by canal to Vigozero Lake; and thence to the Gulf of Onega and White Sea.

This new water-way will not only have advantages from an industrial point of view, creating cheap transportation for timber and grain from the provinces of Archangel and Olonetz, and causing the establishment of saw and grain mills along its course, but is of most importance in its strategic value—placing the Baltic and White Sea divisions in direct communication on their own soil.

With the merchant marine of Russia, her contemplated canals, her finished Trans-Siberian railroad, and her total independence of any foreign steamer, cable, telegraph, or rail, from the Baltic Sea to the North Pacific Ocean, one has a view of possibilities equally as great in peace as in war.

## CANAL IMPROVEMENTS AND WATER POWER IN ONTARIO.

Commercial Agent Hamilton writes from Morrisburg:

The work of straightening the canal at this point is practically finished. The contractors were compelled to cut off the bend at the village of Miaratown. Next to the Lachine and Cedar rapids, the Long Sault, 10 miles west of Cornwall, is the most dangerous on the St. Lawrence. It is intended to build a canal 200 feet in length, 50 feet wide at the bottom, and 21 feet deep, to utilize the water power. There will be three turbines (twins) of 1,000 horse-power each. The power produced, it is said, will be second to none in the Dominion.

## EFFECT OF SHIPPING BOUNTIES.

A British consular report on the trade of Fiume (Austria), states that shipping shows an increase of 114,000 tons under the Austro-Hungarian flag, and 30,000 tons under the Italian flag. British shipping increased 40,000 tons, which is due to the shipment of horses for South Africa. The shipping trade with British India is by degrees passing into the hands of Austria Hungary, owing to bounties and the repayment of the Suez canal dues to the Austrian-Lloyd steamers.

The return of the canal dues is not limited to vessels of the Austrian-Lloyd fleet only, but is extended to vessels under the charter of the company. British shipping is obviously under a great disadvantage. The tonnage of British ships from the East Indies has decreased 62 per cent., being carried in British ships, and 38 per cent. in Austro-Hungarian ships, the relative figures in 1899 being 64 and 36 per cent. The exports to British India are carried entirely in British vessels. British shipping represents 20 per cent. of the ocean-going steam tonnage, and 30 per cent. in the value of cargoes, whereas Austro-Hungarian shipping shares 77 per cent. of the tonnage and 64 per cent. in the value of cargoes. Comparing the values of trade, the United Kingdom ranks first with 25 per cent.; Austro-Hungary with 18½ per cent., Italy with 14¼ per cent., France with 11¼ per cent., Turkey with 6 per cent., and the United States with 5¾ per cent. The direct trade with the United Kingdom and colonies under the British flag comprised cargoes entered £593,000; cargoes cleared, £825,000, the respective figures in 1899 being £633,000 and £237,000.

THE maximum draught at present allowed for vessels in the Suez Canal is 25 feet 7 inches, and 302 out of 3,441 vessels drawing more than 24 feet 7 inches passed through in 1900. It is hoped that before long the depth of the canal may be increased so as to allow of a draught for vessels up to 26 feet 3 inches. Similarly also, the breadth of ships is becoming greater, and 212 vessels of a beam of 50 feet and upwards have used the canal in 1900.

## TO ENHANCE LAKE TRAFFIC.

James J. Hill, who is the head and front of the Great Northern, Northern Pacific and Burlington group of railroads, has comprehensive plans on foot for developing the traffic of those companies in connection with the Oriental trade, which he is about to enter on a huge scale.

He will, he says, be able to carry ocean freight in his big liners at half the cost required with the average vessels, and, though he talks modestly about the new venture, his friends say he has assured them that he will revolutionize the Pacific ocean transportation methods.

Mr. Hill figured out that the surplus of the principal crops raised in the western half of the United States—particularly west of the Rocky Mountains—must find a market in the Orient instead of being hauled eastward to compete with the exports from the Atlantic ports.

When this can be done on a large scale, not only will the agricultural classes receive more for their products, but the shipments of the railroads will be considerably increased. Furthermore, the profits of the transportation companies will show a still larger increase, because they will get a greater volume of westbound tonnage, which thus far is comparatively light in the Western States.

The transcontinental railways have plenty of freight to bring east, but the showing on westbound traffic has not been so good, although it costs just as much to haul empty cars west as loaded ones.

Now, according to Mr. Hill, the building up of Oriental traffic, particularly from the railway standpoint, will add largely to the net returns of these companies without greatly increasing their operating expenses, for they will be carrying back full cars, where many of them at present have to run empty. But in addition to this he expects large returns from the steamboat lines, and an enhancement of the lake traffic.

Mr. Hill gave some details of how he will handle the Oriental trade with his ocean leviathans of 28,000 tons capacity, which, he said, would carry the cargo of the White Star freighter Celtic, at present the largest ship afloat, and lift a bulk almost equal to that of the latter ship in addition. Mr. Hill's new ships for the Pacific trade, which are now building at New London, will cost \$2,500,000 each.

"There is an enormous trade awaiting development in China and other Asiatic countries," said Mr. Hill, "but in order to capture it we have to deliver goods to them more cheaply than anybody has done in the past. To get our share of the business we must market things more cheaply than merchants of other nations, and to build up the trade in interior points of Asia we must, of course, reach a level of prices much lower than has ever been before attained. There are myriads of Orientals who live on 10 or 15 cents a day—some for less—and we must give them cheap food and clothing.

BEDLOE'S ISLAND, New York Bay, whereon is planted the Statue of Liberty is under the jurisdiction of three sets of officials; the War Department, the Light House Board of the Treasury Department and the New York Citizens' committee. Major Taylor conceived the idea that the War Department could attend to the duty of looking after the one electric arc light in the torch at a less expense than the Light House Board. As a result, Col D. P. Heap, of the Engineer Corps, and Capt. William M. Taylor, of the Navy Department, both of whom are members of the Light House Board, visited the island recently, and after investigating the situation recommended to the Treasury Department that the lighthouse reservation and plant at Bedloe's Island be turned over to the War Department.





## CLEVELAND.

*Special Correspondence to The Marine Record.*

Capt. Graham has taken charge of the large steel tow barge Roebling, vice Capt. Ingraham, resigned.

The steamer building here for William H. Mack and others, is rapidly nearing completion and will be ready to launch on Wednesday next, Sept. 18, at Lorain.

The record of ore receiving at Lake Erie ports for the month of August was  $3\frac{1}{2}$  million tons; last year there was about  $\frac{1}{2}$  million tons less. Ore is being mined and sent forward as rapidly as possible.

On her last trip here the boilers of the twin screw passenger steamer North West were reported as working better than for several trips. She is about a day behind her schedule time but picked up a few hours in the later runs.

The United States Navy recruiting office has been opened in the Post Office building, in charge of Lieut. D. W. Blanner, U. S. N., who is assisted by Chief Boatswain, John J. Kellin, Frederick Ruth Warrant, machinist, and R. Percy Crandall, surgeon. The office will be open until September 14.

Capt. Geo. Mallory and Chief Engineer Alonzo Arnold are waltzing the steamer Victory along this season. Pilotage, experience and mechanical skill are pleasantly united in the above-named combination of talent. The Victory is 3,774 tons and owned by the Inter Lake-Transportation Co., Messrs. Pickands, Mather & Co.

The U. S. S. Cleveland will be launched at noon Saturday, Sept. 28. Mayor Johnson has received a notice from the builders to that effect, together with an invitation for himself and other official representatives of the city to be present. President Ashman will name the committee to attend the launching next week.

Repairs on the passenger steamer City of Buffalo, which broke the crosshead of her high pressure cylinder Tuesday, have been completed and she left for Buffalo this morning. Great anxiety was felt regarding the steamer, as it was reported that she was on fire off Willoughby with 1,200 passengers on board Tuesday morning. She was towed back to this port and all passengers were safely transferred.

Dredging companies are making a good sized kick on the work at Lorain. Bids were offered and closed for dredging a soft bottom and hard clay has been struck expecting to find shale on inshore part of the contract; as the difference in dredging means several cents a yard the contract will require some sort of revising. James Pryor has a sub-contract from Gaynor Bros. on the job, and it is somewhat of an extensive one, too.

There is a growing feeling even among the most experienced and conservative shipmasters that their services are being made light of by owners, managing owners, chief clerks and shore engineers. They're finding that they are masters of nothing, and they are being made use of like puppets with a string tied to them. This is the view that I have had presented to me this week and was assured that the feeling was quite general among the masters.

The following meteorological observations are furnished by the office of the United States Weather Bureau for the week ending September 11: Prevailing wind direction during the week, S. E.; highest velocity, 36 miles S. W. on the 10th. Mean temperature for the week, 67; highest temperature, 80 on September 7; lowest, 55 on September 9. Sunrise and sunset data computed for local time at Cleveland: September 13, sun rises 5:37; sets 6:13; September 16, sun rises 5:40; sets 6:08; September 19, sun rises, 5:43; sets 6:02.

The steamer William Edenborn, owned by the Pittsburgh Steamship Co., (United States Steel Corporation), A. B. Wolvin, Duluth, manager, and which is one of four vessels that are the largest on the Great Lakes, has delivered at Conneaut from Lake Superior the largest cargo ever moved on the lakes. The ship was credited with carrying 7,380 gross tons of iron ore, but the actual weight was 7,454 gross tons, as all vessels in the ore trade carry 1 per cent. more ore

than they are paid for—an allowance made on account of moisture. The number of net tons (2,000 pounds) in the cargo was 8,348.

The Cleveland Cliffs Iron Co. has issued the following instructions: "To masters and chief engineers: It is desired that masters and chief engineers of steamers shall not be away from their respective boats both at the same time for any length of time when in port. To illustrate: It is expected that both shall not be away from the boat an entire day, or over night, at the same time. Either desiring to be absent from the boat to go to another port, while the boat is loading or discharging, will advise this office before doing so. It is desirable that this office should at all times be within easy access of either officer."

Marine columns ought to be handled a little more carefully by those who make a pretense of knowing what they write about. Picking up an exchange I have now before me, a statement that the Midland Queen, hence from Chicago to Montreal, via Midland, loaded her first cargo at Birmingham for Chicago. In the next column I learn that the steamer Hartford, formerly owned by the American government, now plies between New York and Chicago with freight and passengers. Birmingham is an inland town and the Hartford is a naval reserve training ship stationed at Detroit. The Terry, which is the vessel meant, is bound to Chicago from New York and is to be used exclusively for lake service.

Heroic conduct on part of the crew of the tug Sprinkle which picked up eighteen drowning men at the waterworks crib at the recent fire disaster, was handsomely rewarded last week by the city council. In public recognition of their brave and timely rescue of the eighteen men, the city's legislative body adopted a resolution to pay them \$300. Of this amount \$150 goes to Cap. Henry Thorn, \$60 to engineer William Kennelly, \$45 to fireman John McCaffery, and \$45 to Edward Doyle, fireman. Councilman Sulzman said that \$300 was a very small sum for such heroic services, and he refused to vote for the resolution. It might well have been made a neat \$1,000 though the recognition granted was much better than ignorantly ignoring the service altogether as has been done in the past.

A dinner was given by the officers of the Second Battalion of Naval Reserves, O. N. G., on Monday night at the Century Club, to all of the officers of the Great Lakes squadron. The ships represented are the United States Steamer Michigan, revenue cutter Fessenden, Naval Reserve ship Yantic, of Michigan, and the Naval Reserve ship Hawk, of Ohio. Lieutenant Commander W. E. Wirt, of the Hawk, presided, and there were seated at the table Captain W. Winders, Lieutenant Casey Morgan, Dr. W. B. Grove, Ensign T. E. Larimer, Paymaster F. O'Leary, Cadet T. Pratt Mainx, of the Michigan; Capt. J. B. Moore, Assistant Engineer S. M. Rock, of the Fessenden; Captain S. Hendrie, Lieutenant Commander F. D. Standish, Lieutenant D. B. Duffield, Ensign W. B. Stratton, of the Yantic; and Lieutenant Arthur Dovale, Lieutenant Frank Semon, Lieutenant M. G. Vilas, Dr. G. F. Glass, of the Hawk. The guests of honor were Lieutenant Commander George R. Clark, U. S. N., of the hydrographic office, and Commodore George Gardner. Speeches were made by Captain Winders, Captain Hendrie, Captain Moore, Lieutenant Commander Standish, Lieutenant Dovale and Lieutenant Commander Wirt. The table was prettily decorated. A feature of the feast was the double-terreted men-of-war made of ice cream.

## BUFFALO.

*Special Correspondence to The Marine Record.*

The attack on the life of the President here last week is deplored by all of us and the general opinion seems to be that a special law should be enacted to deport all anarchists who may consider that they can abuse our form of Government.

If the Canadians permitted the Welland canal route to be developed by Americans it would perhaps affect the future of Georgian Bay routes, consequently they have declined to entertain the Wolvin syndicate proposals. This is also a throw down for W. J. Connors.

Our coal shipments by lake last week amounted to 80,000 tons, Chicago, Milwaukee and the head of the lakes, taking the most and in the order named. The season still shows less by about 200,000 tons than last year. The rates are 50 cents to Lake Michigan and 35 cents to Lake Superior, Toledo and "Soo", 40 cents. Chicago has received 400,000 tons this year.

## CHICAGO.

*Special Correspondence to The Marine Record.*

The schooner Sea Gem, Capt. Hanshaw bound from Charlevoix to Milwaukee was lost at Manitowoc this week.

Announcement is made that the Northern Steamship Co.'s Duluth service has been discontinued for the season. The steamships North West and North Land, however, will continue to run to Chicago and intermediate points up to Oct. 1.

Capt. Riley Phillips, aged seventy-two, died at Benton Harbor last Thursday. He had sailed for many years in the Graham & Morton and Goodrich lines, and many years ago sailed the steamer Jay Gould in the grain trade between Chicago and Buffalo.

J. B. Merrill, of Milwaukee, formerly a partner of R. P. Fitzgerald, and an old-time vessel owner, died at his home on Monday. He was seventy-six years old. Mr. Merrill had not been connected with vessel matters for the past five years; at the same time he was very generally known at all lake ports.

There is a shortage in the amount of coal received by lake at Chicago and South Chicago up to September 1 compared with the corresponding date last year. This shortage amounts to 214,427 tons, or a falling off of about 30 per cent. from last year. The figures are: Coal received to September 1, 1900, 666,260 tons; received up to September 1 this year, 451,833 tons.

Judging from a report sent out from here last week abandonment of a vessel seemed necessary before salvage services would be in full effect. While there is no question regarding recompense for bringing a derelict into port, salvage services are of as much force when the abandonment is not total. There is a difference though between ordinary and extraordinary towing.

The steel steamer Spokane, of the Wilson Transit line, opened the route between Chicago and the new harbor of Meaford, on Georgian Bay, last week. The harbor is described by Capt. Williams as being located at the mouth of the Big Head river, and with an easy approach to within a half-mile of the harbor. The channel is dredged from there up to the elevator to a depth of 22 feet, and is 150 feet wide. It is proposed to extend the approach by widening the channel and by putting in more breakwaters.

The lake excursion season closed this week for the whale-back steamer Christopher Columbus. The Columbus opened the season on June 27th and since that date lost but one day, in which repairs were made to her propeller. During the period of seventy days her largest number of passengers was 3,900 and the average 2,000. When she closed the season she had carried about 150,000 persons, a much larger business than she has heretofore done. Capt. Robert Smith was again in command of the craft and he will spend the winter at Duluth.

On behalf of the steamer S. M. Stephenson, Charles E. Kremer, Esq., is about to sue the city for damages sustained by the steamer when she went aground in south branch at Ashland avenue. It is claimed that dredges working on sanitary district work piled the mud taken from one draw of the Ashland avenue bridge into the other draw of the bridge and vessels were not given due notice of the shoal so formed. Mr. Kremer is our best admiralty lawyer and desires that all marine interests should be duly conserved, and it is hoped that he will be eminently successful in his plea of this suit.

The acting Secretary of the Treasury at Washington has sent a letter to Wm. Penn Nixon, collector of customs, authorizing that official to turn back to the Northwestern Steamship Co. the sum of \$191.65, which is in his hands, the company to return it to four employees, who were technically made deserters by the action of the deputy United States consul at Liverpool. The parties charged with desertion fully proved that they were not deserters and satisfied the Treasury Department; consequently the collector of customs was ordered to repay the money to the Northwestern Steamship Co., expecting of course that it would be at once paid over to the people who were charged as deserters. The Commissioner of Navigation ought to be heard in this matter, as it is possible that he is making a precedent which will redound to confusion in the future.

Capt. Miles Barry's action in running away from Port Colborne with the Hartford on Wednesday night caused a good deal of comment in marine circles here. Marine men said that the bills for repairs in the Welland canal were always excessive, but this is the first time an American vessel owner has succeeded in getting away from them. Ships are generally tied up in the canal itself where they cannot get



away. "If the Canadian Government has the right to seize the Hartford at Port Colborne," C. E. Kremer, Esq., the admiralty lawyer, said, "then it will have the right to seize the boat in Canadian waters anywhere they find it. With the right to seize goes the right to use force, and if the Hartford should disobey the orders of the Canadian revenue cutter in Canadian waters the cutter might bring the Hartford to time by sending a shot through her. I hardly think it is likely affairs will go that length, but I presume they would if Capt Barry kept on his way after being ordered to stop."

#### DULUTH-SUPERIOR.

*Special Correspondence to the Marine Record.*

The wheat rate from Duluth to Buffalo is  $2\frac{1}{8}$  cents with no immediate prospect of an advance, although some brokers declare that the tendency is upward.

Major Clinton B. Sears, Corps of Engineers, U. S. A., is assigned to duty as officer in charge of the harbor improvements of the port of Manila, relieving Capt. William E. Craighill, C. of E., U. S. A.

Several cargo boats ordered late last season or early this year are to be completed within the next few months, and they include the steamer being built at the Superior Shipyards for W. H. Meyer, of Milwaukee, and others.

The shipments of lumber from the head of Lake Superior for August were 62,000,000 feet—46,000,000 from Duluth, 14,000,000 from Superior, and 1,500,000 from Two Harbors. The latter point is doing very little this year, and nearly all the lumber cut in the north comes straight by to the Duluth docks, twenty-eight miles further on.

The lumbermen are protesting against the enforcement of harbor rules regarding log towing and may work for a repeal or modification of the existing laws. Capt. Gaillard, Corps of Engineers, U. S. A., to whom is entrusted the conservancy and improvement of rivers and harbors within the district, believes in carrying out the spirit and intent of the laws in whatever form they are placed before him and regardless of personal leanings pro or con.

The grain firm of Spencer, Moore & Co. sue James Davidson, the vessel owner, for failure to provide transportation for 200,000 bushels of grain at the time agreed upon. The transportation was to have been available on May 20, of the present year, but was not provided until May 23. The grain is stated to have been worth \$75,000 and was to be shipped to Buffalo, N. Y., the extra elevator charges amounting to \$500; insurance, \$74; and interest \$24.61, the total amount sued for being \$598.61.

It is probable that next season a route will be established by the United States & Dominion line of boats (Booth's line) between Duluth and the Soo, and such an arrangement will, without a doubt, be a source of much satisfaction to the people all along the south shore of Lake Superior. The plan is to put on two new and up-to-date boats to run the entire length of the lake, touching at all the important towns and running in connection with the smaller vessels now trading along the north and south shores from Duluth and Sault Ste. Marie.

The steamer Preston, was sold at public auction by Deputy United States Marshal Sharvy in the federal building, Duluth, last week, for \$3,200. Capt. Harlow, the late master of the vessel purchased her for Johnson, of Cleveland, who was also one of her former owners. The vessel was sold on an order by Judge Lochren to satisfy claims amounting to \$3,088 and for which she was libeled. The principal claimants were Capt. A. R. Sinclair and Capt. Ed. England. A circumstance connected with it was the arrival of Capt. Sinclair, of Chicago, representing the underwriters, about five minutes after the sale had taken place. He brought with him \$5,500 with which to buy the boat, if necessary, but it was knocked down to Harlow for \$2,300 less. Mr. Sinclair arrived in the city on the 11 o'clock Omaha train, at the moment the sale took place and reached the federal building just in time to congratulate the successful bidder.

The Wisconsin Central Railway will rebuild its great ore dock at Ashland this winter and will probably spend \$100,000 on the improvement. "The dock will be rebuilt throughout and something over 5,000,000 feet of timber will be used in the work. The entire structure will be raised ten feet, making the top deck sixty-five feet high and providing for the ready loading of the largest boats now in service or that are at all likely to be built. In this work it will be necessary to rebuild the extension of the present dock as the foundations have crept and settled. It is possible that the dock will be enlarged, though that has not yet been

determined. The dock at present is one of the largest on the lakes, its capacity being 40,000 tons. The largest single dock is the Northwestern dock at Escanaba, which stores 43,000 tons. If the enlargement contemplated at Ashland is made, the capacity will be not less than 45,000 tons, possibly 50,000 tons, making it the largest single dock in the world.

The total sum that can be recovered by all claims against the White Line Transportation Co., owners of the steamer Bon Voyage, for their losses in the burning and sinking of that vessel in May last is \$599.62, says the Duluth News-Tribune. This is the appraised value of the remains of the boat and her cargo, \$575 for the former and \$24.62 for the latter. Judge Lochren of the United States Court has filed an order approving the appraisal as well as a stipulation filed by the White Line Towing Co. and surety company, to the effect that they would pay the equivalent of the appraised value to claimants as soon as awarded by the court. An order restraining the prosecution of the suit of Allen & Burns against the owners of the vessel for losses incurred in her destruction and also that of Bar Altman for the death of his wife and other relatives in the same accident was also filed. The former suit is filed in the municipal court here and the latter is now pending before the United States Circuit Court of Northern Michigan. The injunction includes all other suits that may be brought against the company on account of the wreck, and action is ordered stayed pending the disposition of the present matter. Bar Altman, Allen & Burns and all other persons claiming damages are cited to appear before T. H. Pressnell, of Duluth, who is appointed commissioner, and present proof of their claims before December 19, 1901. Upon presentation of the claims the court will probably order the distribution of the \$599.62 among those entitled to it.

#### DETROIT.

*Special Correspondence to the Marine Record.*

A whole fleet of vessels stranded off Port Huron this week owing to smoke covering the mouth of the river. No lives were lost. Capt. Plough of the Life Saving Service done noble work in the rescue of crews.

No Detroit divers seem anxious to undertake the work of raising the Smith drill, sunk by an explosion of dynamite at the Limekilns Crossing last Saturday. The current where the drill lies is very swift and diving operations will be attended with danger and difficulty.

Capt. Frank J. Hackett of Amherstburg, formerly mate of the steamer John Oades, has been appointed by the Lake Carriers' Association as captain of the new lightship Kewaunee. His three assistants have not yet been selected. The Kewaunee will be placed next Saturday.

Capt. John Smith, of the schooner Hanaford, died at the Marine Hospital on Monday and it is believed that he took his own life. His home was in St. Clair and it is said that he has been despondent for some time. Capt. Smith was found in a field where he had shot himself in the mouth and swallowed an ounce of carbolic acid.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Detroit, for the week ending September 10, 1901. Prevailing wind directions for the week, N. E.; highest velocity, 26, N. E., September 7th. Mean temperature for the week, 70°; highest temperature, 88°, on 7th; lowest, 52°, on 9th.

The Yosemite a sister ship to the Colonel was successfully launched from the Wyandotte yards of the Detroit Ship Building Co. on Saturday morning. Her general hull dimensions are 376 feet over all, 50 feet molded beam, and 28 feet molded depth, with a carrying capacity of 5,300 tons. She was towed up to the Orleans street yards where the work of installing her machinery and boilers will be rushed.

After an absence of about a month, Commander J. C. Wilson, U. S. N., Light-house Inspector, has returned to Detroit from a tour of inspection of the light-houses on Lake Superior. He reports all the property of the United States in these waters as being in excellent condition. The houses will probably be closed, and the buoys taken up about December 1st, or as near thereto as the conditions of the prevailing weather may permit.

The old passenger steamer Greyhound, of the White Star Line, which has been running between Detroit and Port Huron since 1877, has made her last trip. The Greyhound was built originally for the Goodrich line and was known as the Northwest. Later she was sold to the Detroit & Cleveland line, being operated between Detroit and Cleveland. Her machinery will be placed in the new hull now

under construction at the Wyandotte yards of the Detroit Ship Building Co.

The Commercial Union Assurance Co. has made a disclosure in the suit commenced against it and Luther L. Slyfield and Arthur B. Slyfield, by E. E. and A. L. Dennis, of Detroit. The disclosure shows that the boat White Star was insured in the company for \$2,000 but that Luther L. Slyfield had transferred his interest to George W. and Fred T. Moore and Arthur B. Slyfield to Mary E. Slyfield. The company further claimed that it was not indebted to the Slyfields but to their assignees.

United States Engineer E. S. Wheeler, of Detroit is at Sault Ste. Marie for the purpose of investigating charges which have been preferred against Supt. Donald Mackenzie of the ship canal, and subordinates. Mr. Wheeler was formerly a resident of the "Soo" and for several years was general superintendent of the canal and had charge of the local government work. He was superseded by U. S. Engineer Joseph Ripley. Mr. Wheeler is thoroughly conversant with the conditions existing on the canal.

The first drowning in shooting the "Soo" rapids in 30 years occurred on Sunday. The descent had almost been reached when in making too short a turn, the boat struck a rock and went over. Wm. Boucher, a pilot, and Nathaniel Pomeroy, a tourist, from Oberlin, O., were drowned. The other occupants, Pomeroy's father, G. L. Brems, Joseph Meyers, Mathew Meyers, of Elyria, O., and Antoine Piquette, a pilot, saved themselves by clinging to the boat until picked up. The pilots, it is alleged, were both intoxicated.

Wrecking Master Harris Baker has returned with his outfit from the work of recovering the cargo of the schooner William Home, off Seal Choix Point, Lake Michigan. He succeeded in salvaging the entire pig iron cargo of the boat, but all of his divers are laid up as a result of the work. William Manning, one of the best men in the business, was paralyzed from head to foot and is just able to be up after three weeks in bed. The work was done at a depth of over 30 fathoms, and Baker has just signed contracts for a deeper job next summer.

Supervising Inspector-General James A. Dumont, who is making an inspection of the offices in his department as far west as Detroit, came here on Wednesday. He advocates a law bringing all small launches that carry freight and passengers under the regulations governing larger boats. It is generally well-known that Dumont is an old man after small things and his mind soars to dinghies if it ever expands. The supervising inspector-general of the U. S. Steamboat Inspection Service is the weakest link in the chain of the Treasury Department and consequently makes the service a laughing stock.

S. F. Angus, who has just returned from an extended trip in the Lake Superior region, was greatly impressed with the opportunities for development of Duluth, Minn. "Duluth," said he, "in my opinion, is going to be one of the big cities of this country, and become for the great northwestern country what Chicago is to the great middle west. The grain shipments through Duluth are increasing each year and the Great Northern Railroad will this year bring into that city 75,000,000 bushels of grain. Duluth is now a hustling city and I was surprised at the amount of business being done there."

It is quite likely that masters and pilots will show their hands next winter and get some of the good which lake engineers are now deriving from their strike last spring. It is said that they must now assert themselves, or become nonentities aboard the craft that they are sailing. With the lesson taught owners regarding the power of the engineers' association came more consideration for the engine drivers, and the conductors of the craft believe that they should no longer play the milksop to owners as they have done in the past, but insist upon a proper support of their authority as masters, better terms and radically different, that is less servile, is fast becoming a butt for owners to kick at, or ignore, and they see this sticking out every day of the season.

The Chicago Hardwood Record has disposed of the Schley inquiry and so far as that eminent naval authority is concerned, the Admiral is vindicated in advance. Without regard to the merits of a squabble in itself disgraceful, this fashion of pre-judging differences of the sort too often makes a wild-eyed wanton of the goddess of justice. Why not say with the Irishman when asked if he was guilty or not guilty—"How c'n I tell," said Pat, "afore I hear the ivvydince?"



### IMPROVEMENTS AND NEW INDUSTRIES AT SAULT STE. MARIE—THE FALLS WILL BE DRIED UP—ALL SURPLUS OUTFLOW UTILIZED.

A resume of the work now being carried out at Sault Ste. Marie has been compiled and from the particulars given up to date we take the following:

At Sault Ste. Marie eight dredges have begun work on an approach and channel for the great ore receiving and shipping dock the Clergue companies have decided to put in. These docks will be above the Canadian lock about a mile and near the site of the charcoal furnaces and initial steel plant, now nearly ready for operation. A site has been chosen farther up the shore at the long point that sweeps out into the "Soo" river, for the proposed additions to the steel making capacity of the company. This will be improved later.

The great power canal of the Michigan Lake Superior Power Co., on the American side of the rapids, is about completed so far as the excavation is concerned, though it will take a long time to clean up the bottom, line the sides of the canal for the lessening of friction, cut out the ends that now hold the water back and complete the power house. The turbines will be started up next summer. Work on the mammoth power house is progressing very fast. The foundations are all in, the steel work has risen one story, the steel and masonry receiving chambers are done and the turbines are being placed very fast. A number of them are already in and ready, while many more are on the ground. Each of the eighty is expected to develop more than 600 horse power, making an installation equal to that at Niagara. Excavation of the wide forebay—1,400 feet across at the power house end—is done and the sides are being lined with timber and masonry. This power house is the largest steel erection under construction in America today, there being more than 6,000 tons of structural material in the building. To aid in this construction six traveling derricks are placed upon tracks on the top of the steel work and are in constant use. In addition to them, hydraulic riveters, etc., are in continuous occupation. The masonry curtain of this building along the river front is up one story and will be pushed up as fast as the three remaining stories of the steel work can be raised.

Excavation for the third power canal, the second upon the Canadian side, is well started, and will be pushed, as there is need of the rock to be taken therefrom. This rock is going into the various buildings under way about the chemical end of the works, in connection with the sulphur and nickel works as well as for the wall of the steel mills up the river.

These steel mills will be in operation, rolling about 500 tons daily, in two or three months. The foundations for two charcoal furnaces of 150 tons daily capacity each are in and the substructure is raising as rapidly as the material can be brought and put in place.

Steel ore cars of 50 tons capacity are being constantly received for the Helen mine railway and are forwarded to the mine by shipload. Those cars are now stenciled "Algoma Central & Hudson Bay Railway," as is all the rest of the rolling stock of the company. The main line of road northward from the Sault is being steadily pushed northward, and is expected to make a connection with the Helen mine, 100 miles north, this winter, so that ore can be brought down at any season to the works at the Sault. The Helen mine road itself is being pushed northeasterly to the new Josephine mine and to a connection with the main line at the point where surveys show the junction work has commenced at this Josephine mine and that property is expected to make some shipments next year. A careful sampling of the Helen is showing a better grade of ore than had been anticipated, and it looks as though careful mining, such as can be carried forward when the property is more fully opened, will furnish a bessemer grade.

With the approaching completion of the American canal and the drain upon Lake Superior that will thereafter result, it was necessary to hasten the work upon the proposed dam across the Sault rapids. This dam has been under way now for a month and the concrete piers are about completed for a fourth of the width of the river. The dam follows the line of the Canadian Pacific's international bridge. The concrete piers are closely spaced and will be connected by steel shutters, etc., that will regulate the flow of the stream. This dam will be completed by the time the American canal is ready for water. Instantly the flow over the rapids will be greatly reduced. With the additional drain that will

come with the second Canadian power canal the flow over the old channels will be nearly dried up and the historic Soo rapids will be a mere memory.

The company's railway projects east of the Sault, in the Sudbury country, are progressing, and there are now several pyroclite miners there in preliminary operation for this concern.

These and other developments are progressing as fast as possible. It means a vast expenditure and an enormous machinery of organization. This organization reaches far beyond the limits of the Sault and the immediately surrounding region, and if it could be laid bare would present a magnificent example of heroic activity and foresight.

Mr. Clergue is not building for the immediate future, vast as that is, but for a very considerable period, and as time progresses and the foundations laid far down are built upon and come into view, the work now being carried forward will assume its true importance and its real connection with the scheme of Canada's advance and development.

### STATISTICAL REPORT OF LAKE COMMERCE.

THROUGH CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO, FOR THE MONTH OF AUGUST, 1901.

EAST BOUND.			
Articles.	U. S. Canal.	Canadian Canal.	Total.
Copper, net tons.....	11,113	1,202	12,315
Grain, bushels.....	1,260,600	290,000	1,550,600
Building stone, net tons...	7,544	1,035	8,579
Flour, barrels.....	923,596	151,929	1,075,525
Iron ore, net tons.....	3,109,314	161,832	3,271,146
Iron, pig, net tons.....	3,298	234	3,532
Lumber, M. ft. B. M.....	173,866	822	174,688
Silver ore, net tons.....	.....	.....	.....
Wheat, bushels.....	1,616,017	484,213	2,100,230
Genl. Mdse., net tons.....	12,578	5,110	17,688
Passengers, number.....	4,280	2,723	7,003
WEST BOUND.			
Coal, hard, net tons.....	106,508	7,830	114,338
Coal, soft, net tons.....	604,527	57,358	661,885
Flour, barrels.....	.....	.....	.....
Grain, bushels.....	.....	3,600	3,600
Manf'd iron, net tons.....	19,133	7,130	26,263
Salt, barrels.....	44,199	10,580	54,779
Genl. Mdse., net tons.....	59,534	11,829	71,363
Passengers, number.....	4,731	2,577	7,308
Freight:			
East bound, net tons.....	3,596,310	209,042	3,805,352
West bound, net tons.....	796,332	86,133	882,465
Total freight, net tons.....	4,392,642	295,175	4,687,817
Vessel passages, number..	2,596	635	3,231
Reg'd tonnage, net tons...	3,716,843	277,453	3,994,296

Compiled at St. Mary's Falls Canal, Michigan, under direction of Lieutenant-Colonel G. J. Lydecker, Corps of Engineers, U. S. A. Joseph Ripley, Assistant Engineer and General Superintendent.

### STATEMENT OF THE VISIBLE SUPPLY OF GRAIN.

As compiled by George F. Stone, Secretary Chicago Board of Trade, September 7th, 1901.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	1,100,000	1,145,000	544,000	87,000	83,000
Chicago.....	4,852,000	6,969,000	1,610,000	260,000	1,000
Detroit.....	332,000	67,000	102,000	213,000	6,000
Duluth.....	1,611,000	636,000	425,000	405,000	153,000
Fort William, Ont..	295,000	.....	.....	.....	.....
Milwaukee.....	111,000	322,000	403,000	22,000	31,000
Port Arthur, Ont....	20,000	.....	.....	.....	.....
Toledo.....	855,000	617,000	915,000	352,000	6,000
Toronto.....	8,000	.....	2,000	.....	9,000
On Canals.....	390,000	378,000	399,000	.....	10,000
On Lakes.....	1,388,000	1,372,000	98,000	23,000	140,000
On Miss. River.....	.....	.....	.....	.....	.....
Grand Total.....	28,410,000	13,123,000	7,378,000	1,645,000	663,000
Corresponding Date, 1900.....	51,735,000	5,357,000	8,825,000	831,000	457,000
Increase for week..	653,000	447,000	477,000	156,000	119,000
Decrease " ".....	.....	.....	.....	.....	.....

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

### NOTES.

AN exposition for accident, sanitary, and life-saving service is to be held at Frankfort October 5 to 21. The exposition is to be exclusively scientific. Visits of workmen will be arranged, as the chief aim will be to benefit those engaged in industrial pursuits.

A RECENT bulletin of the Lick observatory confirms an earlier announcement that Polaris is a triple star. The bright star—the North Star—moves about the center of mass of itself and a dark companion star in 3 days, 23 hours, 14 minutes. These two stars also move slowly around a third dark star in a long period.

COMMERCIAL AGENT HAMILTON reports from Morrisburg, Ont., that his mail is filled with letters from all parts of the United States, asking information about trade, etc., in Canada. He thinks that our merchants are making a mistake in not sending more representatives to that district. The field is open; there is no duty on samples and no tax is required. All kinds of American goods are in demand, on account of their finish and material.

THE Lake Submarine Torpedo Boat Company, capitalized at \$1,000,000, and using the patents of Simon Lake, of Bridgeport, Conn., has decided to establish a shipyard and machine shop there for building submarine torpedo boats. While the plant is being established the Pacific Iron Works will build a boat for the company, which will be used in demonstrating the value of the type to the Naval Bureau of Construction and Equipment at Washington.

AVOID procrastination as you would the devil and his works. "All things come to him who waits" is not only a mischievous sentiment, but a false translation. The original proverb reads: "All things comes to him who knows how to wait;" whose patient, persistent hand shapes the march of events towards his desired goal; who in time of peace has prepared for war, and, knowing that the race is neither to the swift nor the battle to the strong, keeps on running and never ceases to fight.—Unknown Exchange.

"JENKINS BROS.' VALVES" are known to be of the highest quality, being manufactured by Jenkins Bros., of New York, with branches in all principal cities. They are made of the best metal, and bear the firm's special trade mark stamped on them, without which none are genuine. Besides this well known specialty they have the steam packing, which is pronounced by users throughout the world as the best joint packing manufactured. It weighs 30 per cent. less than many other packings. It is therefore much cheaper with equal durable ability.

THE contract for the erection of a million bushel elevator, to be located midway on the harbor front of Montreal, has been granted by the Board of Harbor Commissioners to J. A. Jamieson, of Montreal, for \$642,000. This amount comes out of the \$1,000,000 loaned to the Board by the Dominion Government for elevator construction. The new building must be completed and ready for use by April 1st, 1902. The tenders submitted were: J. A. Jamieson, Montreal, \$642,000; The Burnet and Record Company, Minneapolis, \$820,000; McDonald Engineering Co., Chicago, \$975,000; A. F. Chapman & Co., Buffalo, \$1,090,000.

THE first tidings from Capt. Baldwin, the Arctic explorer, reminds those interested in the various expeditions in search of the north pole, that half a dozen Arctic companies are out and are liable to be heard from any day. Returning whalers to England are expected to bring news of the Peary, Sverdrup and Banandahl expeditions, and Russian dispatches will be the earliest source of information respecting Capt. Wellman and Baron Toll. Capt. Baldwin's chances of reaching the pole are considered by experts of the Royal Geographical Society superior to those of any other explorer, owing to the fine equipment of dogs for the sled journeys over the ice.

THE New York Evening Post says: "The renewed and apparently well-founded report that the Inter-oceanic Canal Commissioners now strongly favor the Panama route, and may recommend it to the President if a satisfactory transfer of the property can be arranged, is in line with the information which comes to the Evening Post. We understand, in fact, that a formal offer is before the Commission to turn over the Panama Company's concession and plant to the United States, or to any American corporation, on terms to be fixed by disinterested appraisers. We believe that there is a slight hitch about the matter on the part of some of the directors in Paris, but that this is in a fair way to be got over." This vindicates the judgment of General Abbot, who has all along contended that the purchase of the Panama Canal was the proper solution of the question of an isthmian canal.



## STRANDING AND COLLISION IN FOG.

(Communicated.)

A Liverpool shipowner, on the supposition that "there is nothing so dangerous to a ship as a fog, because it may lead to almost any kind of danger, such as collisions or running ashore," wants it to "be made imperative, that no man gets command of a ship who does not have a most thorough knowledge of meteorology," asserting, that "the examinations passed by sea captains to-day are crude in the extreme, and therefore the need is greater for constant study of weather charts." In other words, the errors in navigation are to be corrected by meteorology, according to the fancy of this man.

In making these accusations and complaints he is evidently oblivious of the fact, that a low standard of examination is maintained in favor of ship owners, to increase the number of officers of the merchant marine, and keep their wages down to the lowest mark; the appointment of foreigners to command British vessels working in the same direction. It is the greed of ship owners, that makes a low standard in pecuniary, as well as, scientific respects. Not willing to pay high wages, and compensate captains for the time and outlays required for a thorough study of navigation, mediocrity prevails, and the savings on this score are more than offset by the payment of high insurance premiums, to make good the losses consequent upon insufficient training of officers.

Two-thirds of all losses of vessels at sea are due to stranding, caused by the use of defective methods for finding the place the ship is in, for, if these methods were not defective vessels would not get stranded in fog and thick weather. Therefore, ignorance of the place the ship is in, or, a mistaken identity of place, is the cause of stranding, and not ignorance of the weather, or weather forecasts.

A "constant study of weather charts" presupposes a continual stay of vessels in port, in order to get those charts. But as vessels are built to earn some money, they have to be under way the greater part of the time, and have to put up with all kinds of weather, fogs not excepted. Likewise, have they to suffer the penalty of running ashore, attached to the use of defective methods for ascertaining position, no matter whether they do, or do not study weather charts, storm warnings excepted.

One of the principal causes of stranding is the use of the floating or patent log, in determining position, by the assistance of any known point of departure. This log partakes of the set and drift of currents, and therefore gives only the distance run on the water, and not the distance over the ground. The position by this log is always so much in error as the current sets during the run; and as in thick weather observations for the place the ship is in are wanting, vessels are unable to correct the error, and in the vicinity of land meet with disaster.

In clear weather, the errors in position due to the use of defective methods are generally detected and corrected by the lookout, therefore the lookout is the main stay of all bunglers in navigation; but when the lookout fails, especially in fog and thick weather, stranding is the consequence. The safety of vessels nowadays, depends entirely on the lookout, instead of on a correct reckoning.

The only correct log, not influenced by currents is the ground log, correcting courses for leeway and current, and giving distances made good; but the ground log is not found nor used aboard any ship; so that it rightly may be said, criminal negligence, and not fog, is the cause of all strandings.

That defective methods for finding the position of a vessel at sea are used by the score—the floating log is only a single instance—is not the fault of sea captains, but the fault of boards of examination and wreck-courts, by whom those methods are approved; whose rules and decisions are law, and who alone are responsible for the great number of strandings.

As to collisions in fog, we find from statistical data (see protocol of the International Marine Conference, 1889, page 375) that the danger of collision is greater in the daytime than at nights; from which may be inferred, that fog does not increase the danger of collision. So much is certain, that no collisions of any consequence would occur if all vessels acted in conformity with article 16 of the International Rules, which reads:

"Every vessel shall, in a fog, mist, falling snow, or heavy rain storms, go at a moderate speed, having careful regard to the existing circumstances and conditions.

"A steam vessel hearing, apparently forward of her beam, the fog signal of a vessel, the position of which is not ascertained, shall so far as the circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over."

The Liverpool shipowner, therefore, may rest assured that gross negligence and defective methods for ascertaining positions are the causes of all disasters at sea in fog, and that the study of meteorology would not in the least improve prevailing conditions.

JOHN MAURICE,

Chicago, Aug. 1901. Civil Engineer and Naut. Expert.

## MUST ASSIST AFTER COLLIDING.

The steamer Alexander McDougall, belonging to the Pittsburg Steamship Co., (United States Steel Corporation), has been fined \$1,000 by Collector of Customs Willcuts, of Duluth, for not stopping to assist in the rescue of passengers after sinking the ferry steamer Steuben at Fort Gratiot, Aug. 21.

The McDougall had another boat in tow and collided with the ferryboat a short distance from her dock, from the effects of which she sank at once. A number of passengers were on the boat, but there was no loss of life, a tug and several small boats picking up everybody in the water. Capt. W. H. Kilby, of the McDougall, did not stop to assist in the rescue, as the law demanded that he should do, but instead got out of the way as soon as possible.

In his report to the government inspectors of steam vessels Capt. Kilby explained that after colliding with the ferry he saw that a number of small boats had put out from the dock and that he could accomplish the most good by getting his boats out of the way of the rescuers as soon as possible, which he did. The law, however, does not recognize contingencies and a fine must be imposed, subject to a rebate at the hands of the Treasury Department if it is found that the violation is excusable. The matter was reported to Collector Willcuts from the Port Huron district. Fort Gratiot is about a mile above Port Huron.

## CONTRACT FOR CARGO STEAMER.

The Craig Ship Building Co., of Toledo, O., has closed a contract for a freight steamer of about 5,500 tons capacity. The order was placed by Capt. Colin McLachlan, of Port Huron, who is managing owner of the steamer Kittie M. Forbes and the schooner Mary E. McLachlan. The new boat will be the largest ever turned out at the Toledo yard. She will be 390 feet over all, 370 feet keel, 48 feet beam and 28 feet deep. She will have triple expansion engines with cylinders 22, 38 and 59 inch with 42 inch stroke. She will have three Scotch type boilers, to be allowed 170 pounds of steam. The new boat will cost about \$230,000. Work will be started on her at once, and she will be ready for business at the opening of navigation next spring. The Toledo firm has built a number of Welland canal sized steamers, for coastal service and has turned out several fast passenger boats, but this is the first order for a 5,000-ton steel steamer that has been placed with Craig's. The McLachlan boat is the only craft that the Craig Ship Building Co. has under contract for 1902 delivery. The Toledo firm, however, is figuring with Lake Michigan parties for a passenger steamer, and another deal may be closed in a short time. Two steamships for the Atlantic coast fruit trade are now being built and are well along towards completion.

## A NEW IRON ORE MINE.

Nineteen years ago George Wagner discovered a fine iron ore property in Canada, about 24 miles from the "Soo." It was secured from the Canadian government, but when the parties behind Wagner undertook to build a railroad they found it would cost not less than \$1,000,000, and the project was abandoned.

Now it is only one and one-half miles from Wilde station on the Algoma Central & Hudson's Bay railway. The Breitung Iron Co. has been organized by the original owners, with Mr. Wagner as president, and development work is in progress. The property comprises 1,000 acres, and is described as a mountain of specular ore similar to that in Negaunee, running 60 per cent. pure on the surface, with a practically inexhaustible supply. Mr. Wagner was a member of the State Legislature four terms and has many friends through the State of Michigan who will be glad to hear of his fine prospects.

## SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

**Collision—Steamer and Sailing Vessel—Presumption of Fault.**—In case of a collision at sea between a steamer and a sailing vessel, the presumption is that the steamer was in fault, since it was her duty to keep out of the way; and the burden rests upon her to rebut such presumption by evidence showing that she kept an efficient lookout, and took all reasonable precautions to prevent the collision. *Merchants & Miners' Transp. Co. vs. Hopkins et al.*, 108 Fed. Rep. (U. S.) 890.

**Wharves—Liability for Injury to Vessel—Unauthorized Removal.**—A dock owner is liable to the owner of a steam canal boat for injury caused by its resting at low water on an uneven bottom in a slip, into which it was moved, by the dock superintendent's orders, in the absence of the master, who had previously protested against the removal on the ground of the danger from such cause, which he had ascertained by soundings. *Smith vs. Yellow Pine Co.*, 108 Fed. Rep. (U. S.) 881.

**Maritime Liens—Wages—Master of Dredge.**—A master of a dredge, which is incapable of being navigated, and therefore earns no money which passes through his hands, and who is, in effect, only a superintendent of the work, having charge of the dredge and the men thereon, and himself performing the duties of engineer, fireman, and general deck hand, is entitled to a lien on the vessel for his wages, the same as any seaman. *The John McDermott*, 109 Fed. Rep. (U. S.) 90.

**Abandonment of Ship.**—The abandonment of a stranded vessel and her cargo by the owners to the insurers is not an abandonment, within the meaning of the maritime law, which terminates the voyage, but results merely in a change of owners; and the duty of master and seamen to stand by the vessel and cargo is unaffected by such change, and services thereafter rendered by them in that regard are not salvage services which can be compensated as such by the courts, however meritorious they may have been. *The C. F. Bickman*, 108 Fed. Rep. (U. S.) 878.

**Violation of Rules—Failure to Sound Fog Horn.**—Under the navigation rules (26 Stat. 320), which requires sailing vessels to use the fog horn "in fog, mist, falling snow or heavy rain storm, whether by day or night," a schooner which fails to observe such requirement while sailing before a sixty-mile wind on a dark and rainy night must be held guilty of contributory fault for a collision with a meeting steamer, unless it affirmatively appears that the neglect could not have contributed to the disaster. *Merchants & Miners' Transp. Co. vs. Hopkins et al.*, 108 Fed. Rep. (U. S.) 890.

**Evidence of Custom.**—A charter, which by its term required the charterer to "provide and furnish the vessel a full and complete cargo of coal," cannot be held to exempt him from such requirement on account of a strike among coal miners, merely upon the testimony of coal operators that such was the custom of the port where no provision to the contrary was made in the charter, when no one of the witnesses ever knew of a case in which a charterer had been so relieved, and as against the testimony of other witnesses of longer experience that no such custom existed. *Continental Coal Co. vs. Birdsall*, 108 Fed. Rep. (U. S.) 882.

**Shipping—Injury to Cargo from Defective Refrigerator—Limitation of Liability by Bill of Lading.**—An agreement in a bill of lading for dressed meats to be transported across the Atlantic, that the carrier shall not be responsible for any loss or damage arising from breakdown or injury to the ship's refrigerator or its machinery, even though arising from defect existing at or previous to the commencement of the voyage, is one which it is competent for the parties to make, and it relieves the carrier from liability for loss arising from such causes unless negligence is shown, the burden of proving which rests upon the shipper. *The Southwark*, 108 Fed. Rep. (U. S.) 880.

**Collision—Tow and Anchored Steamship—Insufficient Lookout.**—An incoming steamship reaching New York too late at night to pass quarantine anchored for the night only not far from the quarantine wharf on Staten Island, being about one-fourth the distance from Staten Island to the Long Island shore. She was not within the official anchoring grounds but was not in a place to obstruct navigation by vessels coming up or down the ordinary channel way. She carried a good anchor light, and the night was not dark. During the night scows coming in tow on a course substantially to the westward of the ordinary one came into collision with the steamer and injured her. Held, that she could not be charged with fault for the collision because of her anchoring outside the grounds for so brief a time, under the circumstances, but the tug must be held solely in fault for being out of the usual course without maintaining a proper lookout; it appearing that she could readily have seen and avoided the steamer, had such lookout been kept. *The Municipal*, 108 Fed. Rep. (U. S.) 895.



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CLEVELAND, O., SEPTEMBER 12, 1901.

THE Niclausse water tube boiler is now being placed on the market by the Stirling Co., Chicago. The two largest steamers in the world now in course of construction are to be fitted with batteries of these boilers, built under the special inspection of London Lloyd's Register surveyors.

We are still waiting for the Hydrographic Office, U. S. N., to re-assert that the height of the sunken whaleback tow-barge Sagamore is 32 feet from keel to truck. Please tell us what you did mean Mr. Hydrographer, and we will gladly announce same to the practical lake marine community.

THE thanks of the RECORD are due the Gas Engine and Power Co., and Charles L. Seabury & Co., consolidated, for an invitation to the launching of the U. S. torpedo boat Wilkes, on September 28, from their yards at Morris Heights on Harlem, New York City. A special train will be placed at the disposal of the guests of the company.

It is stated that unusual heat has prevailed in the Arctic regions this year. An enormous quantity of icebergs have thereby been set free and been driven to the middle of the Atlantic. The reports of the captains of steamers which ply between Europe and America state that ships have met with dozens of icebergs, some as high as over 100 feet.

IT is possible that we are in the power of armor making sharks. The obvious conclusion is that the government must take immediate steps to obtain an armor plate plant of its own. Then we shall not be at the mercy of any one concern, and, at the same time, there will be found one concern that the trust can neither buy out nor ruin by underselling. The Government will also be able to make armor-plate for about half what it has paid to others. When private interests commence to cheat and beat the people, it is time to call halt.

IT is to be hoped that the gilded horseshoe fastened beneath the bowsprit of the Discovery will bring its fabled good luck to the ship, says the London Chronicle. Despite the superstition being centuries old, it is much alive, and many persons still place a stolen or found horseshoe on the chimney hearth, under the belief that it brings good luck to the house. In the "Marriage of the Arts," written in the year 1618, one of the good wishes was "that the horseshoe may never be pulled from the threshold." Against the power of witchcraft, too, it was considered efficacious. Aubrey records in the seventeenth century that "it is a thing very common to nail horseshoes on the thresholds of doors, which is to hinder witches that enter the house." In Monmouth street in 1797 several horseshoes were nailed to the doors, and on April 26, 1813, Sir H. Ellis counted seventeen in that street, nailed against the steps of doors.

## GAMBLING ON SHIPBOARD.

It is just as well to observe that the shipmaster is not only responsible for the safe conduct of his vessel but also for all she contains, be it cargo or passengers. He is chief personage on the craft, and, as such, in common law, must exercise due authority.

A case of gambling on shipboard wherein the district attorney, at Cleveland, held that there was no law in the United States Statutes prohibiting gambling on the lakes, has brought this matter into prominence and calls for comment also, for legal reasons, authority to act.

The master of a ship controls the floating territory over which the flag of his nationality waves. He is the supreme authority, under the law, for all that transpires on board his craft and must so exercise his jurisdiction.

Gambling, in any form, is obnoxious, but persons are tacitly permitted to so indulge in the license until it may interfere with the liberty of others and at such a stage the shipmaster is adjudged powerful enough to squelch any proceedings along that line which may be brought to his notice.

As a matter of fact, people should conform with the laws of the state from which a vessel hails, and, as a feature of law, with that of the Constitution.

To this end we look to shipmasters to so exercise their authority.

## LAKE MARINE POST OFFICES.

The establishment of a postal delivery on the Detroit river has redounded to the credit of the department. It has been proved eminently successful and a purely beneficial government regulation of the best order. We would therefore advocate an extension of the service, and our friends at Sault Ste Marie seem alive to the subject in its proper bearings as the following from the News clearly indicates:

"Postmaster Webster's efforts to secure a marine post office for Sault Ste. Marie should, as no doubt it will, receive favorable consideration by the department. The importance of establishing such an office at this point must be recognizable to anyone who will give the matter a moment's thought. It is the only stop boats make hailing from lower lake ports until they reach the head of Lake Superior. Many seamen desire to send money home, and the establishment of an office here with the money order department attached thereto would enable them to do this without delay. Every day, during the season, Canadian boats pass through the locks, having on board persons who desire to mail letters. They may be well supplied with Canadian stamps, which are useless here. They haven't the time to make the post office and letters and often business of an important character has to wait. Many seamen have no other post office than the Soo locks, and depend entirely upon getting their mail here, and nine out of every ten call for mail. There are many other reasons why an office should be located here expressly for the benefit of the marine interests. Mr. Webster has filed an application for the establishment of one here, and it will be backed up by facts and figures such as the officials must recognize. We believe that another season will see the request granted.

## IMPROVEMENTS ON THE SUEZ CANAL.

The report of the Suez Canal Company, just out, deserves special attention, as it becomes apparent that improvements, in conformity with modern requirements of navigation, will be inaugurated in the near future.

Since the opening of the Suez canal, little has been done in following the development of navigation. It caused, therefore, no surprise that the year 1900 showed no increase in revenues and that the traffic, which at first showed a rapidly rising tendency, in late years has been almost at a standstill.

Transoceanic navigation has for some time realized that the use of small steamers for long distances leaves but a small margin of profit, even on high rates of freight transportation. Vessels of large tonnage, however, were unknown at the time of the opening of the Suez canal and the depth of the canal is insufficient for them, which is undoubtedly the reason that the year 1900 shows no increase in traffic. This is to be remedied by modern reforms. The deepening of the channel to a depth of from 30 to 31 feet has been begun. It is contemplated to light the canal by electricity, so as to let the traffic proceed at night. To meet these expenses and those of a few minor improvements, a new loan of 25,000,000 francs (\$4,925,000) will be negotiated.

## AUSTRIA'S GREAT CANAL SYSTEM.

Austria has just adopted a measure for a system of canals that is of far-reaching importance. This undertaking will do more than anything yet enacted in this monarchy to promote the commerce of the country. It will not only bring the various provinces into closer touch, but will also afford the cheapest freight connections with Germany and Russia.

The measure provides for (1) a canal from the Danube to the River Oder; (2) a canal from the Danube to the Moldau, near Budweis, in connection with the canalization of the Moldau from Budweis to Prague; (3) a canal from the Danube-Oder Canal to the Upper Elbe, in addition to the canalization of the intervening Elbe bed as far as Melnik; (4) a canal from the Danube-Oder to the Vistula, and to some navigable portion of the Dniester.

These 992 to 1,054 miles of navigable waterways are to be constructed by the State, with the co-operation of the provinces, districts and towns, and in particular the cities of Vienna and Prague, which are to furnish proportionate contributions. To guarantee the contributions, the Government is to begin immediate negotiations with the interested provincial representatives and with the municipalities of Vienna and Prague. It may be mentioned that the contributions can be made either by single payment or in annual installments, or through the erection of certain portions of the designed work—such as harbors, docks, and streets leading to them—or through the cession of land or relinquishment of other property rights and of rights to the water ways to which those concerned might otherwise be entitled by existing laws.

The work of construction must begin, at least some time during the year 1904. The necessary preliminary work must be so calculated that the whole system will be finished within twenty years. The cost of construction, in so far as this cost has not already been covered through the contributions of the various interested sections, is to be met by an issue of 4 per cent., tax free, Government bonds, redeemable within ninety years. The Government is empowered to issue these bonds to an amount not to exceed 250,000,000 crowns (\$50,750,000) during the period of construction, from the year 1904 to the end of 1912, and the money thus raised shall be used only in building the designated waterways. For the expenses of construction after the year 1912, the necessary legislative measures will be taken later.

All matters connected with the execution of the canal project shall fall within the jurisdiction of the Ministry of Commerce. The entire cost of construction is estimated at \$152,150,000. The canals are designed to admit boats up to 600 tons burden.

## SOME ATLANTIC SPEED RECORDS.

According to newspaper reports the German steamer Deutschland broke the record for speed on her last westward trip and at the same time the passengers in the smoking room broke the record of the amount put up in the pools made on the daily runs.

A number of years ago George B. Grant called attention in our columns to some suspicious circumstances attending the posting of daily runs of a steamship and the betting upon the runs, the inevitable conclusion from his observations being that those who posted the figures of the runs were likely to have profited from the pools and that the figures posted were not correct.

We do not know whether this is the case with the Deutschland or not, but we do know that where the pools are of such a character that a man may win (as was stated to have been the case the other day) \$12,500 as a result of one day's betting, there is a sufficient pecuniary interest to strongly stimulate "queering" of the records. Some philosopher has remarked that if there were any strong or powerful pecuniary interest affected by the law of gravitation it is quite certain that there would be many people and much literature endeavoring to prove that the laws of gravitation were all wrong and that no such law existed.—American Machinist.

This is a most unkind and thoroughly unauthorized version of the action of shipmasters in the Atlantic Ocean passenger service. The records of a vessel's passage over the ground, from point to point, are as unalterable and as open as the sun, and each fractional element entering into the change of position can be easily shown and proved on application. The imputation to the contrary was born in depravity and matured in ignorance and we resent it, from the ground up.

ED. M. R.



### THE SUBMARINE BOAT.

At the present time the French have thirty-four boats in various states of manufacture, twenty-nine of which are electric submarine and five submersibles, and they are now carrying out important trials and spending large sums of money in their development. Before many years have passed France will have not thirty-four but hundreds, with which she would be able not only to protect her ports, but to make attacks on our fleet in much the same way as the bands of Boers are making guerilla attacks on our regular army in the Transvaal. Of the continuous stream of ships passing up and down the English Channel—the busiest steamship track on the globe—quite 90 per cent. are British vessels, and upon them our mercantile greatness depends. Let us suppose that in time of war 100 French submarines were let loose in the channel at night. These boats have sufficient speed and radius of action to place themselves in the trade routes before the darkness gives place to day, and they would be capable of doing almost incalculable destruction against unsuspecting and defenseless victims. The same applies to the Mediterranean and other of our ocean highways within the danger zone of the submarine. The submarine boat has thus increased the value of the mechanical torpedo ten fold. To the United States of America the submarine will be of inestimable benefit as it will render the coast practically secure against attack from any country excepting those having naval bases within easy striking distance of their littoral. The boat now universally adopted by the United States is built on the Holland system, and the new British boats building by Messrs. Vickers, Sons & Maxim, Limited, at Barrow-in-Furness, are of similar design. They are to be equal in speed to the French boats, and have other qualities not attained by these boats, the principle of which is that they will be capable of behaving much in the same way as a porpoise. They are capable of coming up and disappearing instantly, so that they can thus determine exactly the mark to be aimed at before discharging the torpedo. The quality of being able to dive in a few seconds renders them much less vulnerable to attack by artillery. As to the periscope, of which the French speak so much, there is no doubt that when cruising submerged in the proximity of the enemy it will be very useful. It is an arrangement whereby a view of the surface from 30 to 50 degrees can be obtained, and enables the boat when submerged to be steered directly for a visible point. The Holland boat has a special arrangement for effecting this purpose, while enabling her to run at a distance below the surface, so that no visible trace of her can be seen. Such an arrangement places this country quite on a level with the French nation, notwithstanding the fact that we may not have given the same amount of attention to submarine warfare. It is true the speed of the submarine boat is not great, but progress is certain. When the Whitehead torpedo was first introduced it had a low speed, and, generally speaking, was very uncertain as to its direction, depth, and applied utility. Now, however, it is capable of running within a few inches of the required depth, at a speed of over 27 miles an hour for a range up to 2,000 yards, and hitting the point aimed at with almost the same precision as a gun. In the same manner there is no doubt the submarine boat will be improved, while there is a great field for development in connection with the electric battery.—Engineering.

### LAKE FREIGHTS.

Iron ore is still king and all efforts are being made to send the product ahead. The rate is still fixed. Duluth offers 2 1/4 cents on wheat, an advance of 1/8 cent from last week's quotation. Chicago is steady at 1 1/2 cents. The lumber rate still holds at \$2.50 per M. feet, though \$2.62 1/2 has been paid to Chicago from the head of the lakes with brisk chartering. Coal rates are firm at last week's quotations. Buffalo is inclined to advance 5 cents so as to secure all available tonnage.

### REVENUE CUTTER SERVICE.

Capt. Shoemaker, chief of the revenue cutter service, has issued preliminary orders to the force of revenue cutter vessels which is to keep the course clear during the America's Cup races. Capt. Walker will be in command, and these cutters have been ordered to assist him at New York September 15: The Algonquin, Onondaga, Windom, Gresham, Seminole, Dallas and Dexter. In addition to these Capt. Walker will have the assistance of several steam yachts, on each one of which a revenue cutter officer will be stationed.

### MORE MAMMOTH CARGO STEAMERS.

It is announced that the Northern Pacific railroad has decided to build two immense steamships for the Pacific and China trade of about the same size as those now at New London, for the Great Northern railway. They will be of about 28,000 tons or three times the capacity of an average ocean freighter. This is a part of the scheme to organize a fleet of large ships which, according to the statement of James J. Hill, will be able to carry freight at one-half the cost of ordinary vessels. They are not intended to make fast time, but a part of their cheapness of operation will consist in the saving of coal and the proportional reduction of crew. The Great Northern's ships will be completed next spring, if there is no delay in their construction. Mr. Hill's plans for handling the business of the Orient on such a large scale have stirred up other transcontinental and steamship companies and it is reported that more leviathans will soon be contracted for to be used in the rivalry for the Asiatic trade. It is believed that a large part of the \$12,000,000 voted by the Canadian Pacific railroad for the purchase of additional vessels will be spent for big ships, to compete in cheapness of haul with Mr. Hill's carriers. Further important developments in the steamship world are pending in connection with the plans of Morgan and Hill, who are working in harmony. There are indications that the ramifications of steamship lines in connection with their railroad systems will be carried considerably further, and that at no distant day they will have a strong hold on many of the most important markets of the world.

### STEEL CASTINGS.

Referring to the annual meeting of the Iron and Steel Institute, recently held in London, the Iron and Coal Trades Review says: Of the papers, perhaps the most really solid and useful was that read by Prof. Arnold on "The Properties of Steel Castings." This paper embodied the results of a series of important researches begun about six years ago at the Sheffield University College to determine the most important unsolved problems connected with the manufacture and treatment of steel castings—a matter that has naturally a great importance for Sheffield, where probably a full half of all the steel castings now made in this country are produced. In this series, the material dealt with consisted entirely of crucible steel manufactured from the best Swedish iron, but as the total imports of such iron into this country do not exceed 55,000 to 70,000 tons a year, it is clear that the matter, after all, has a limited range from that elevated point of view. The conclusions to which the learned professor's first series of experiments have led him are thus summarized: The lessons taught by the data set forth in the preliminary experiments detailed in this paper show that pure iron and carbon steel is not a suitable material for fulfilling the modern specifications drafted by engineers for steel castings. With iron and carbon castings the ductility demanded can be insured with ease, but with such ductility it is impossible to correlate the required tenacity. The latter property, it is true, can be obtained from iron and carbon castings, but at the expense of an almost complete loss of ductility. Therefore, as has already been remarked, excepting the nearly pure iron, the series of castings described have small manufacturing interest. Nevertheless, they form the basis upon which the mechanical influence of silicon and manganese, to be hereafter dealt with, can alone be scientifically measured. On rare occasions, under certain, at present unknown, conditions of melting, steel casting may possess properties practically identical with those of forged steels of similar chemical composition. But such cases form the exception which prove the general rule, that the mechanical properties of annealed castings are much inferior to those of worked steels. This is the more remarkable because the same chemical composition, the same specific gravity, and the same micro-structure can be produced in a casting as in a forged steel, yet the mechanical properties of the latter will be enormously superior.

### A NEW GERMAN FUEL.

The Imperial German Navy and some German manufacturers are using large quantities of "masut" (an oily product of German brown coal tar) for heating and steam-producing purposes. The advantages over coal are stated as follows: (1) The heat-producing qualities of "masut" are said to be one-fourth greater than those of coal; (2) the oil is easier to

handle, it being only necessary to open a valve; (3) very little smoke comes from the use of the "masut"; (4) steam can be produced and full power reached in less time. The coast-defense vessels of the German navy are fitted for the use of this oil. Some of the battle ships and cruisers are also so arranged that they can use both coal and "masut."

Consul Warner, of Leipzig, says that a new process has been patented by which coke can be reduced to particles about 1 millimeter in size, stirred to a paste in a concentrated solution of resinic acid, and then run into briquette molds. The briquettes are said to dry much more quickly if manganese is added to the above mentioned adhesive solution. The consul adds that coke has long been used by German steamboat companies, factories, gas plants, and railroads, and it is expected that this new coke briquette will be consumed in much greater quantities by all of these different industries.

### LETTERS AT DETROIT MARINE POST OFFICE

SEPTEMBER 11th, 1901.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Adams F. O., Matoa	McNally John & Curtis
Ackley G. M., Ericsson	Macaulay Kenneth, Paris
Annal Rob't,	McNutt Ed., Manola
Brenner Al., Colonel	McLeod H. F. Pratt
Buñell Louis, Stafford	McSween Wm.
Britton E. F., Castalia	McLaughlin Jno., Alcona
Bowen L. L.	McCarter John
Bruggeman Jno. A	Pfeifer Emil, Prince
Bellnap Kelly, 2 Tempest	Peterson Will, Tacoma
Brahmer John, Neilson	Potter Anna
Curry W. F., Hattie	Philbrick Dell
Carson Ed., 2 Pierce	Riley Frank, North Eastern
Christiansen Chas.	Rattray Gordon, Omaha
Currie Ray, Tacoma	Rocheleau F. E., Harper
Denges Bert., Glasgow	Rice W. D.
Dyekman Lester A.	Sisson F. A.
Eby Frank, Raleigh	Sonciante Henry, Lincoln
Friedrick J. R.	Simon Eugene, 2 Omaha
Gordon Cap't D.	Samer Max, Bangor
Gray W. R., 2 Manitou	Spaulding H. W.
Green Mrs. Alice	Vanderhoef E. K., Wolvin
Headley Geo.	Willoughby Henry, 3 Colonel
Hickey Thos., Farwell	Williams F. O., Colby
Hill A. B., St. Paul	Wilson W. H., Graywick
Hill Harry, 2 Arthur	Webb J. H., 2 Bessemer
Kazlaske M., Kaliyuga	Wrighton W., Ogeman
LaBelle James	Wagner Billy, Capt. Wilson
Markey Mark, 2 Rensselaer	Wagner Will, Rensselaer
Moss James	Welch Geo., Harper
Morgan Chas. J., 2 Swain	Ward Andrew
Millen Sidney J., Maunaloa	Webb B. C.
	F. B. DICKERSON, P. M.

### NOTICE TO MARINERS.

GREEN BAY, WISCONSIN.

ENTRANCE GAS BUOY NO. 1.—Notice is hereby given that Entrance Gas Buoy No. 1, moored on the easterly side of the entrance to dredged channel leading to the mouth of Fox river, southerly end of Green Bay, Wisconsin, reported August 7, 1901, as not flashing, has been repaired and is flashing as follows:

Fixed white, eight seconds; eclipse, six seconds.

By authority of the Light-House Board.

F. M. SYMONDS, Commander U. S. N.  
Inspector 9th L. H. District.

The British report on water-tube boiler explosions shows that six of the eleven cases reported since 1894 are due to small tube boilers for destroyers. Of these, four were the result of the use of copper, which has long since been discarded, as it was proved to be unreliable. The case of the experimental Babcock and Wilcox boiler was also for a destroyer built at Fairfield, and the circumstances of the explosion were not due in any way to the design of the boiler. Three of the cases were due to defective or careless workmanship, so that it may be said that seven cases were either owing to material or workmanship. In the other four cases the Belleville gave way owing to obstruction either from salting up or other cause. From the eleven explosions six deaths resulted; while had one cylinder boiler exploded on board ship the fatalities would probably have been as great, especially in view of the high steam pressure.





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### EVAPORATION OF WATER OF AMERICAN LAKES AND RIVERS.

Few natural phenomena are of greater practical importance than rainfall and evaporation. They concern closely both our health and our personal comfort. An arid condition of air or earth is highly annoying and injurious. Air far below saturation point has an injurious effect upon the skin, which it dries, roughens and cracks, while during the winter the body heat is too rapidly abstracted, causing a sensation of chilliness, if no more severe symptoms of cold. Air nearly or quite saturated is equally unpleasant during the summer season. The perspiration, instead of being conveyed away in the form of vapor from the body as rapidly as it is secreted, stands in beads upon the skin, and the body heat deprived of its chief outlet and source of loss—the latent heat of evaporation—accumulates and causes discomfort.

Besides these, a dust-laden or a mud-covered earth may be mentioned as real inconveniences. But of more vital concern is the unfavorable effect upon plant development which a water-saturated soil has.

A proper balancing of rainfall and evaporation is essential to our comfortable existence upon earth. When active condensation has set in, the water vapor furnishes a welcome shade from over-fierce solar rays, and always water vapor in the air checks the loss of heat from the earth's surface. In higher realms of our composite nature the phenomena connected with evaporation and condensation of water rouses the reasoning and the imagining capabilities of our being. We naturally inquire, What is evaporation? What are the forces producing this change? What are its effects? The unromantic dweller on lowland plains may see on his horizon splendid mountain summits, and Cordilleran ranges represented in cloudland by billowy masses of minute water drops.

The nature of the phenomena occurring during evaporation, concerning as they do the ultimate molecules of which the substance is composed, cannot be easily understood. One theory is that the molecules of a liquid move on an average more slowly than those of its corresponding vapor, but that some molecules move more rapidly than others, and these rapidly moving particles are constantly escaping from the liquid to lead for a time a free existence in the gaseous state. There are objections to this theory, one being that most fluids will entirely evaporate, and it does not appear how, under certain circumstances, the speed of the motion of their particles is increased. Neither does the theory explain why evaporation is more rapid under decreased pressure. Late experiments seem to point to the conclusion that all bodies are giving off streams of particles much smaller than atoms would appear to be. If this be the case when water evaporates, it is interesting to imagine under what conditions and impelled by what forces they again unite and reform a liquid. Heat undoubtedly has something to do with the process, but other molecular forces are probably acting in conjunction to produce the phenomena of evaporation.

In the case of our three upper lakes—Superior, Huron, and Michigan—the water surface is 81,000 square miles, the area of land draining into them 149,000 square miles. In the Caspian basin the ratio of water to land is 1 to 4, and the balance of rainfall and evaporation is being maintained without any discharge. Would it not also be maintained in

the Great Lakes basin with one square mile of water to two square miles of land area draining into it under like conditions? It would appear almost certain that vast subterranean rivers must find their way into the lakes from outside their basin. In most places throughout the Mississippi valley underground lakes and streams are known to exist, and have been struck in sinking wells. In Montana wells often flow with high pressure.

The temperature of the water in the lake is too low and its color too clear to suggest that much of it had its origin in northern peat bogs. The Mediterranean waters vary in temperature from 90 degrees Fahrenheit on the surface to 55 degrees Fahrenheit in the deeper portions during the hottest parts of the year. The Mediterranean in deepest parts is four times as deep as our upper lakes. The water in our lakes is much colder in proportion to that of the Mediterranean. Lake Superior water is icy cold at all times, and Lakes Michigan and Huron are but a few degrees warmer. The temperature suggests supplies drawn from far-off sources and conveyed in subterranean channels.

The Missouri river loses one-half its water while passing around the Great Bend in Northern Dakota. Other large streams in the western country lose much of their volume in passing over the porous cretaceous strata, and this probably gives rise to the vast system of underground waters, tapped in so many places in the central parts of the continent.—London, (Ont.) Advertiser.

### EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows:

The two fixtures for grain reported in this issue indicate the continued depression in grain freights. New business seems to be almost impracticable, and shippers show no indication to make any commitments ahead. On the other hand owners are holding their steamers almost until they are ready to load, and in some cases have decided to lay up their boats for a month, in hope of better rates offering later on. There has been more activity in cotton charters from the Atlantic Coast, but the rates accepted show no improvement, and with the amount of tonnage still available the prospects for any advance are anything but encouraging.

General cargo business from the Gulf continues neglected, and charterers show no anxiety to take up further tonnage unless at reduced figures. Some further transactions have been concluded for coal from the Atlantic Coast to French ports, and whilst the present low basis of freights exist it is quite probable shipments of this description will continue.

Business in sail tonnage continues very limited, and although few vessels are on offer, the low rates current for steamers have rather a depressing effect on the larger class of ships. To Japan 23 cents has been accepted on case oil, indicating a further decline of one-half cent per case.

Grain is quoted at 1½ cents to Liverpool and 2 cents to London or Glasgow. Hull or Leith 4 cents.

THE Russian ice-breaker Ermack has arrived in Tromsøe, Norway, the voyage planned from Nova Zembla to the mouth of the Yenisei having been abandoned, owing to unbreakable ice barriers. The Ermack discovered on the southeast coast of Franz Josef land several hitherto uncharted islands.

## Pintsch Gas Lighted Buoys.

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## Burn Continuously

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without attention, and can be seen  
a distance of six miles. . . . .

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160 Broadway, New York City.

### LITERARY NOTES.

The Century Co. will issue in October Cleveland Moffet's new book, entitled *Careers of Danger and Daring*, in which he tells what one must face who becomes a steeple-climber, a deep-sea diver, a bridge-builder, a pilot, a fireman or a locomotive engineer. The stories will be strikingly illustrated.

"Success", in its September issue, continues its search for the helpful under the guise of the beautiful. It discovers a spring of inspiration in the words of the Norwegian poet, Ibsen, who writes from across the seas: "Genius, unexercised, is like a poor moth that flutters around a candle until it scorches itself to death;" another, in an article from the pen of President Hadley, of Yale University, who says: "Theories which are easily acquired and glibly recited are met, in practice, with a contempt which is well deserved," and a third in an editorial containing the trenchant sentence, "fine qualities cannot be reached by the checkbook."

Mr. J. C. Turk, the engineer who had charge of the construction of the famous Gokteik viaduct, built near Mandalay, tells in the September *World's Work* how an American company came to outbid all the English bridge builders, how the plans were made, and the parts of the gigantic structure were shipped; how the difficulties which climate, labor conditions and small facilities imposed were overcome, and how the great bridge, with its top in places over 800 feet above the gorge, was finally completed at the usual American profit. The story is vividly written and is illustrated with photographs taken in India by the author.

The September number of the *Smart Set* fully sustains the reputation of that fascinating magazine for vivacity and cleverness. The number opens with an amusing novelette by Caroline Duer, entitled "A New Bonnet for Mary." Mrs. M. E. W. Sherwood writes entertainingly on the subject of divorce under the title of "Untying the Knot." Mrs. Flora Bigelow Dodge, a sister of Poultney Bigelow, is the author of a brilliant and humorous society satire, entitled, "Mrs. Example," while Edgar Saltus writes another of his pyrotechnic essays, entitled the "Pomps of Satan." One of the strongest stories in the number is "The Price of Honor," by Lloyd Osbourne, and Prince Vladimir Vaniatsky contributes a strange tale called "The Queen of the Far Country." There are many other features which make this issue exceedingly attractive. Ess Ess Pub. Co., New York.

### THE COST OF "MONKEYING."

The loss of 270 men by a collision between the *König Wilhelm* and the *Grosser Kurfürst* is ascribed to the confusion resulting from a want of system in helm command. During the last thirty years, as we are told by a writer in the *Armee und Marine*, the system followed in the German Navy sends the ship to starboard when the order "Steuerbord ruder" is given. Before that the contrary was the case, and the ship went to port (backbord). In the German mercantile marine the old system was retained, and in 1891 the North German Lloyd introduced a third system by substituting the words "right" and "left" (rechts-links) for "Steuerbord" and "Backbord," and some other companies followed the example. It has now been decided by representatives of the Bremen companies that the system used in the Imperial Navy shall be adopted, and it is hoped that it may become general, so that the much desired result of uniformity may be obtained.



### SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

#### LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 13....E.	5° N. = N. 7½ E. = E. ½ N.		
Sept. 16....E.	4° N. = N. 7½ E. = E. ¾ N.		
Sept. 20....E.	1° N. = N. 7½ E. = E. ¾ N.		

#### LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 13....E.	6° N. = N. 7½ E. = E. ½ N.		
Sept. 16....E.	4° N. = N. 7½ E. = E. ¾ N.		
Sept. 20....E.	1° N. = N. 7½ E. = E. ¾ N.		

#### N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 13....E.	6° N. = N. 7½ E. = E. ½ N.		
Sept. 16....E.	5° N. = N. 7½ E. = E. ¾ N.		
Sept. 20....E.	1° N. = N. 7½ E. = E. ¾ N.		

#### LAKE SUPERIOR, LAT. 48° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 13....E.	6° N. = N. 7½ E. = E. ½ N.		
Sept. 16....E.	5° N. = N. 7½ E. = E. ¾ N.		
Sept. 20....E.	2° N. = N. 7½ E. = E. ¾ N.		

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

### A PERPLEXING SITUATION.

Steamships Meeting—Violation of Rules.—The ocean steamships Crathorne and Acilia came into collision in the Patapsco river on the afternoon of a clear day, at the point where the Ft. McHenry and Brewerton channels meet, at an angle of about 28°, the channel being at that point about 600 feet wide. The Crathorne was passing down from Baltimore at a speed of six miles, and the Acilia, which was a large ship, 452 feet in length, was coming up at a speed of ten knots or more. Each was in charge of a licensed pilot. When perhaps half a mile apart, the pilot of the Acilia ordered the wheel starboard, and two blasts of the whistle given; his purpose being to pass to the port side of the channel, in accordance with a claimed local custom, but in violation of the inland navigation rules. Owing to a derangement of the whistle, the valve would not close, and but one blast was sounded, which continued until after the collision. The pilot of the Crathorne, taking the first sound of the whistle to be a signal to pass port and port, in accordance with the rules, answered with the same signal, and ported his helm. On

seeing that the Acilia meant to pass across his bows, he reversed. Shortly before collision the Acilia also reversed, but made no change of course, and was making greater speed than the Crathorne at the time of collision. She did not hear the signal of the Crathorne, owing to the sound of her own whistle. Held, first, that the Acilia was in fault in going at a dangerous speed under the circumstances, but chiefly because of the violation of the rules by her pilot, but for which the collision would not have occurred; and, second, that the Crathorne was not guilty of contributory fault in failing to sound danger signals, which would have conveyed no information not already in possession of the Acilia, nor because she did not sooner reverse, her pilot being justified in supposing, up to the time she did reverse, owing to the direction of the channel and the course the Acilia was then on, and in the absence of a contrary signal, that she would obey the rules, and change her course in time to avoid collision; furthermore, owing to the continued blast of the Acilia's whistle when she was manifestly not in distress, the pilot of the Crathorne was confronted by a perplexing situation, without fault of her own, in which he should not be held to the highest degree of promptness and certainty in his actions. The Acilia, 108 Fed. Rep. (U. S.) 975.

### WHY BOSTON IS SO CALLED.

The majority of people know that Boston was named for the little English seaport town directly north of London at the mouth of "The Wash." But how many know how this little town came to have this name we all love so well? Many, many years ago, only 655 years after Christ, there was a very earnest English Monk named Botolph. He was given the choice of a location for a monastery, and, to the surprise of every one, chose a wild, unsettled region near the sea, then called Icanoe. Here a monastery was built, and here the good St. Botolph lived all his life. The sailors and seafaring men knew of this kind-hearted monk, and oftentimes had reason to appreciate his kindly aid, for to every one in distress he was a father. Thus, when he passed away the sailors made him their patron saint. His name, "Botolph," meaning "boat help," lent a superstitious charm to his memory, and ere long seamen or vessels in distress were supposed to be under his care.

A hundred years after, the monastery was destroyed by an invasion of the Danes; but when a little village took its place, St. Botolph was not forgotten, and the village by the sea was given his name.

With centuries of use the name St. Botolph took many changes, thus: Botolphstow, Botolston, Bostonton, Boston. In 1309, when it was called Boston, a very beautiful church was built there, and called "St. Botolph's church." There are now in England fifty churches dedicated to St. Botolph.

John Cotton became the pastor of the Boston church. After a three years' pastorate John Cotton, with others, became a Nonconformist, or Puritan, and left England to join their friends, John Winthrop and others, in their settlement across the sea. This settlement was named Boston, in loving remembrance of their home in England, and was destined to be one of the most beautiful cities in the United States.

So it is through the single-hearted piety and kindness of heart of the lonely English monk of Icanoe that we have every reason to be justly proud.—Boston Journal.

### SHIPYARD CONSOLIDATIONS.

Plans are said to be worked out whereby all the leading shipbuilding concerns in the country are to be merged into one company. United States steel interests and the Pennsylvania railroad are said to be backing the enterprise. The purchase of the Bethlehem Steel Co. by Mr. Schwab, the purchase of the Pennsylvania steel and Cambria steel by the Pennsylvania railroad, as well as the consolidation into one company of the Union Iron Works, the Risdon Iron Works and the Moran Brothers' shipyard are said to be steps in this project. Cramps, the American Ship Building Co., the Bath Iron Works, Roach's, Newport News, and J. J. Hill's plant at new London will, it is said be included.

In so far as the American Ship Building Co. is concerned there is no one in authority who will farther or claim any connection with this far reaching and enterprising project of national importance. It may be said, that, where combinations are formed, they are for mutual interest and advancement, and such a situation argues that there should be an interchangeability of production, an interest of communities working along parallel lines. No such a condition exists relative to ocean, lake and coastal shipbuilding. The lakes may be considered neutral, or in a sense, exclusive territory, in so far as shipbuilding is concerned, therefore, there is no competition or similarity of interests as between fresh and salt water shipbuilding.

### A BRITISHER'S VIEW—SHIPS COOKS.

Mr. Alfred L. Jones, of Liverpool, head of the Elder-Dempster shipping line, is the largest shipowner in the world—at any rate he claimed to be such the other day. His "obiter dicta" in shipping matters are therefore of some consequence.

He says the worst thing that can happen to the United States is to give one man a monopoly of the ocean.

Nor does he envy Mr. Pierpont Morgan the possession of the ships he has got so long as British shipowners have fair play.

But the latter, for their part, must make their ships more safe and more popular with British seamen, if they want to attract the men who have made British shipping what it is today.

A great deal depends on how the men are treated. Fore-castles must be made more comfortable, and the Board of Trade should grant certificates of three classes to ships' cooks.

At present, owing to indifferent sea cookery, as much food is wasted as is consumed on many a ship, and he would be glad to pay extra wages to efficient and certified ships' cooks.



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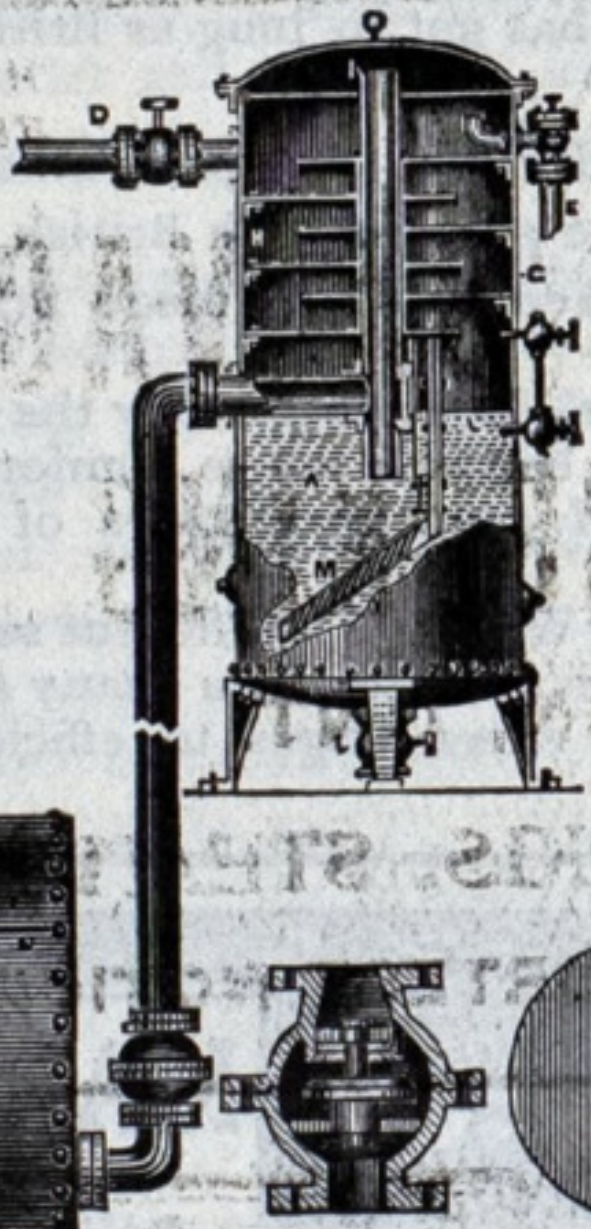
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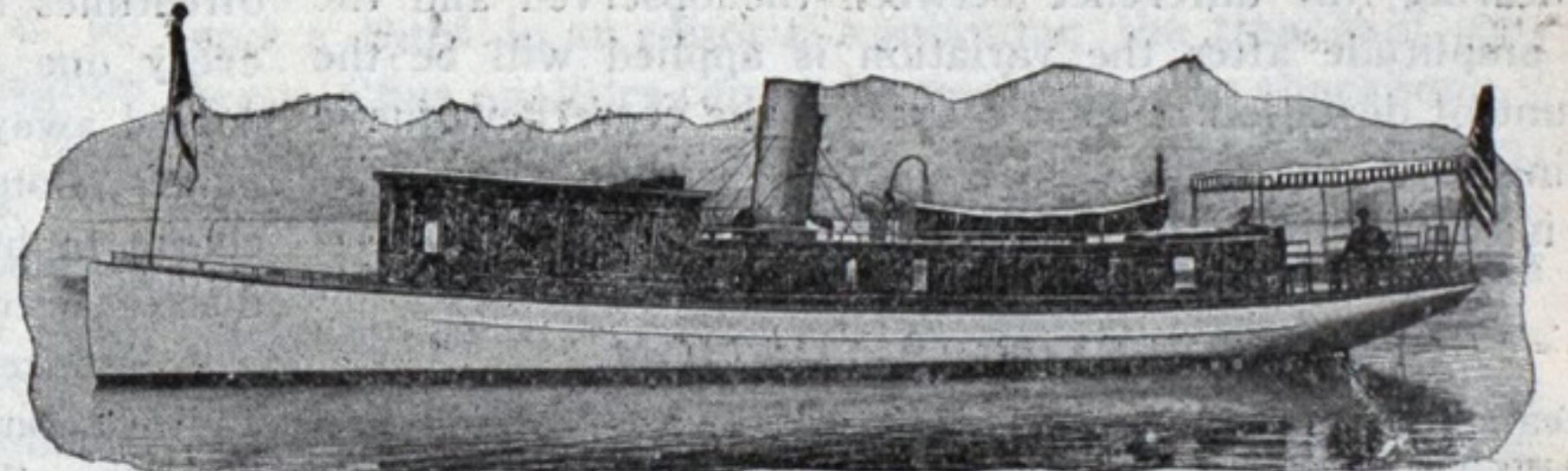
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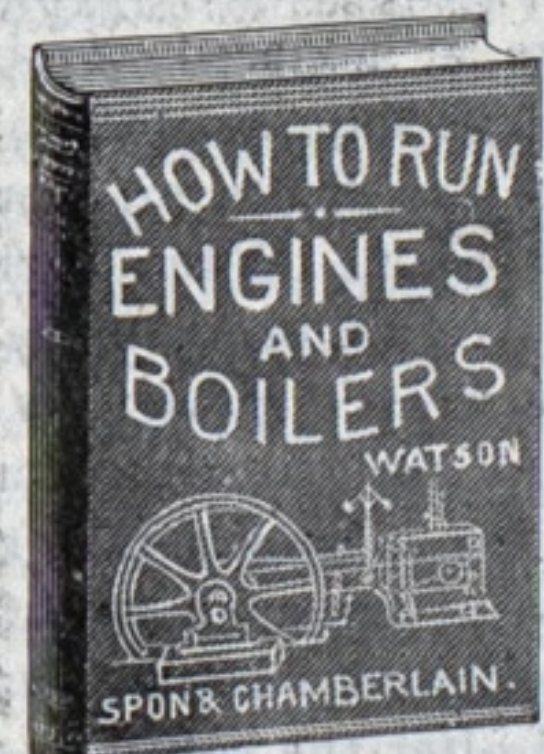
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### THE HERMIT OF CAPE MALEA.

About twenty-five years ago there was a young sailor who, by dint of hard work, integrity of character and firmness of will, reached at the age of 26 the summit of his ambition—becoming master of what would then be called a good-sized steamship, some 900 tons register. Upon this accession to good fortune he married the girl of his choice, who had patiently waited for him since as boy and girl sweethearts they parted on his first going to sea. And with rare complacency his owners gave him the inestimable privilege of carrying his young bride to sea with him.

How happy he was! How deep and all-embracing his pride, as steaming down the grimy Thames he explained to the light of his eyes all the wonders that she was now witnessing for the first time, but which he had made familiar to her mind by his oft-repeated sea stories during the few bright days between voyages that he had been able to devote to courtship. The ship was bound to several Mediterranean ports, the time being late autumn, and consequently the most ideal season for a honeymoon that could possibly be imagined. Cadiz, Genoa, Naples, Venice, a delightful tour with not one weary moment wherein to wish for something else. Even a flying visit to old Rome from Naples had been possible, for the two officers, rejoicing in their happy young skipper's joy, saw to it that no unnecessary cares should trouble him, and bore willing testimony, in order that he should get as much delight out of those halcyon days as possible, that the entire crew were as docile as could be wished, devoted to their bright commander and his beautiful wife. Then at Venice came orders to proceed to Galatz and load wheat for home. Great was the glee of the girl wife. She would see Constantinople and the Danube. Life would hardly be long enough to recount all the wonders of this most wonderful of wedding trips. And they

sailed, with hearts overbrimming with joy as the blue sky above them seemed welling over with sunlight.

Wind and weather favored them; nothing occurred to cast a shadow over their happiness until, nearing Cape Malea, at that fatal hour of the morning, just before the dawn, when more collisions occur than at any other time, they were run into by a blundering Greek steamer coming the other way, and cut down amidships to the water's edge. To their peaceful sleep or quiet appreciation of the night's silvery splendors succeeded the overwhelming flood, the hiss and roar of escaping steam, the suffocating embrace of death. In that dread fight for life all perished but one, he so lately the happiest of men, the skipper. Instinctively clinging to a fragment of wreckage, he had been washed ashore under Cape Malea at the ebbing of the scanty tide, and his strong physique reasserting itself enabled him to climb those rugged battlements and reach the plateau. Here he was found gazing seaward by some goatherds, who, in search of their nimble footed flocks, had wandered down the precipitous side of the mountain. They endeavored to persuade him to come with them back to the world, but in vain. He would live, gratefully accepting some of their poor provision, but from that watching place he would not go. And those rude peasants, understanding something of his depth of woe, sympathized with him so deeply that without payment or hope of any, they helped him to build his hut and kept him supplied with such poor morsels of food and drink as sufficed for his stunted needs.

And there, with his gaze fixed during all his waking hours upon that inscrutable depth wherein all his bright hopes had suddenly been quenched, he lived until quite recent years, "the world forgetting, by the world forgot," a living monument of constancy and patient, uncomplaining grief. By his humble friends, whose language he never learned, he was regarded as a saint, and when one day they

came upon his lifeless body fallen forward upon its knees at the little unglazed window through which he was wont to look out upon the sea where his dear one lay, they felt confirmed in their opinion of the sanctity of the hermit of Cape Malea. —F. T. Bullen, in the London Spectator.

### FLOTSAM, JETSAM AND LAGAN.

The Lumber Trade Journal rises to remark that "the North Pole, it is believed, will be found, when found, to be made of cypress—no other wood could last from the beginning of the world to the date of such discovery."

Before the end of the present year two of the largest ships ever built in the United States, and the fourth largest in the world, will be floating on the Delaware river. The vessels are the Kroonland and the Finland, now nearing completion in the Kensington shipyards of the William Cramp Co. They are being built for the Red Star Line of the International Navigation Co., and will be the largest and fastest vessels ever constructed for that line.

Twenty-five hundred men are now employed at the shipyard of the New York Ship Building Co., in Camden, N. J., and the company has eight vessels under contract, four for the Atlantic Transport Line, three for the Hawaiian-American Steamship Co., and one for Colonel J. M. Guffey, the millionaire oil magnate. The last named vessel is now being converted into a bulk-oil carrier, which will have a carrying capacity of over 1,000,000 gallons.

Assistant Engineer Wm. T. Blunt is sweeping the lake for the obstruction which has been reported off Monroe. The obstruction, which is supposed to be a sunken boat, was reported last year by the steamer Ravenscraig and by the Helena this year. The bearings taken by either boat are not of sufficient accuracy to locate the obstruction and Mr. Blunt has been instructed to keep up the search until he finds it. Already he has covered an area of 32,000 feet by 150 feet.

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For further particulars see  
"Passenger Lines on the Lakes,"  
page 18.

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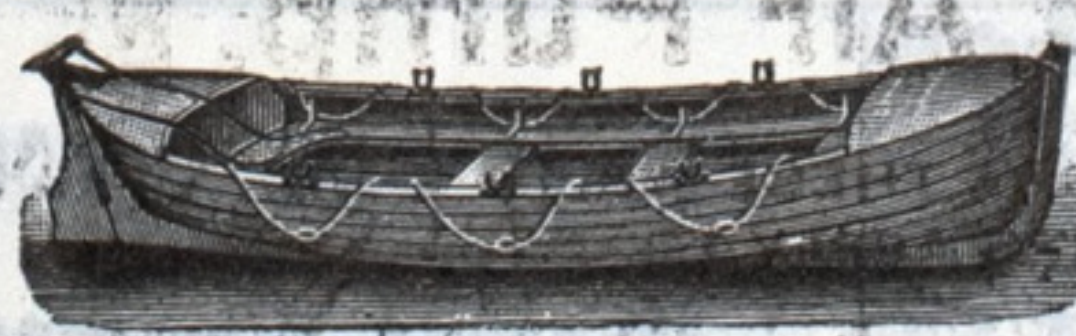
The Ohio Fish and Game Commission will receive bids at Auditor of State's office, Columbus, Ohio, 2 p. m., Saturday, October 5th, for the construction of a patrol boat for use in the waters of Lake Erie. Plans and specifications may be seen at Auditor of State's office, Columbus, Ohio, or copies of same may be secured upon application from the Secretary of Ohio Fish and Game Commission, Athens, Ohio. The Commission reserves the right to reject any or all bids. Bids may be mailed to Ohio Fish and Game Commission, care Auditor of State's office, Columbus, Ohio.

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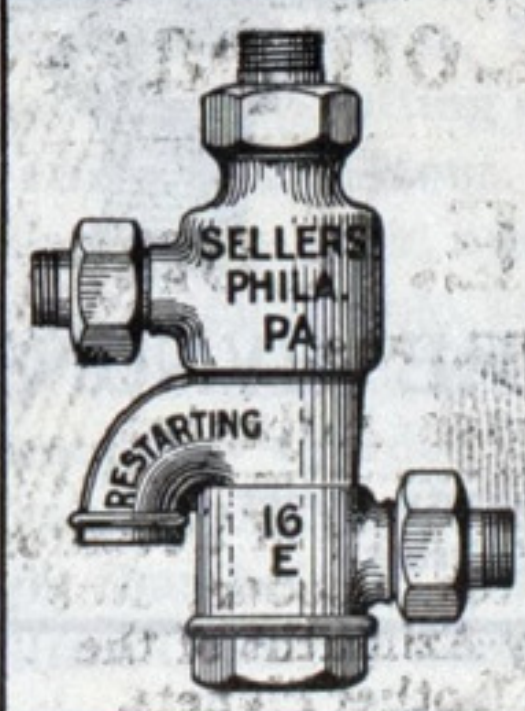
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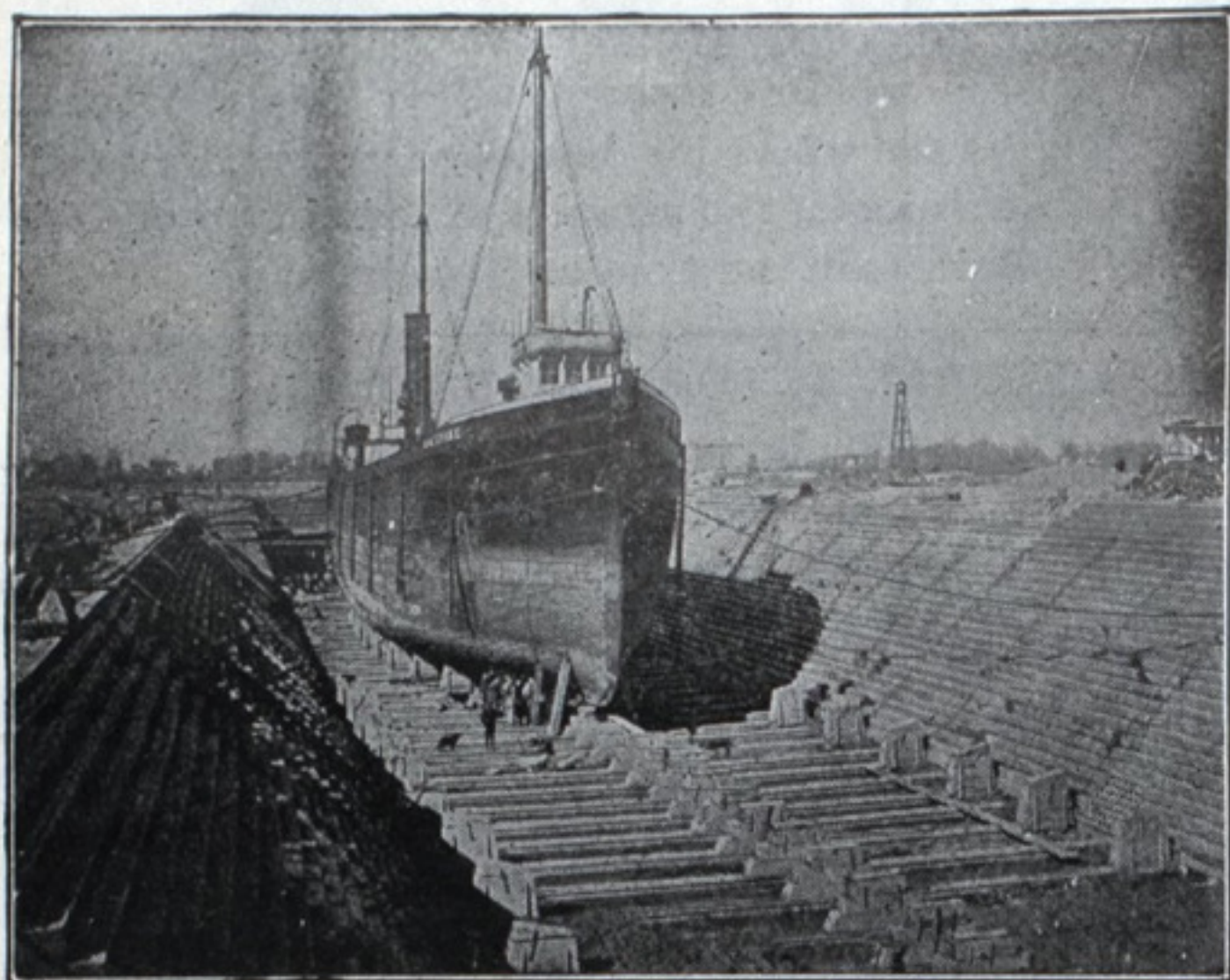
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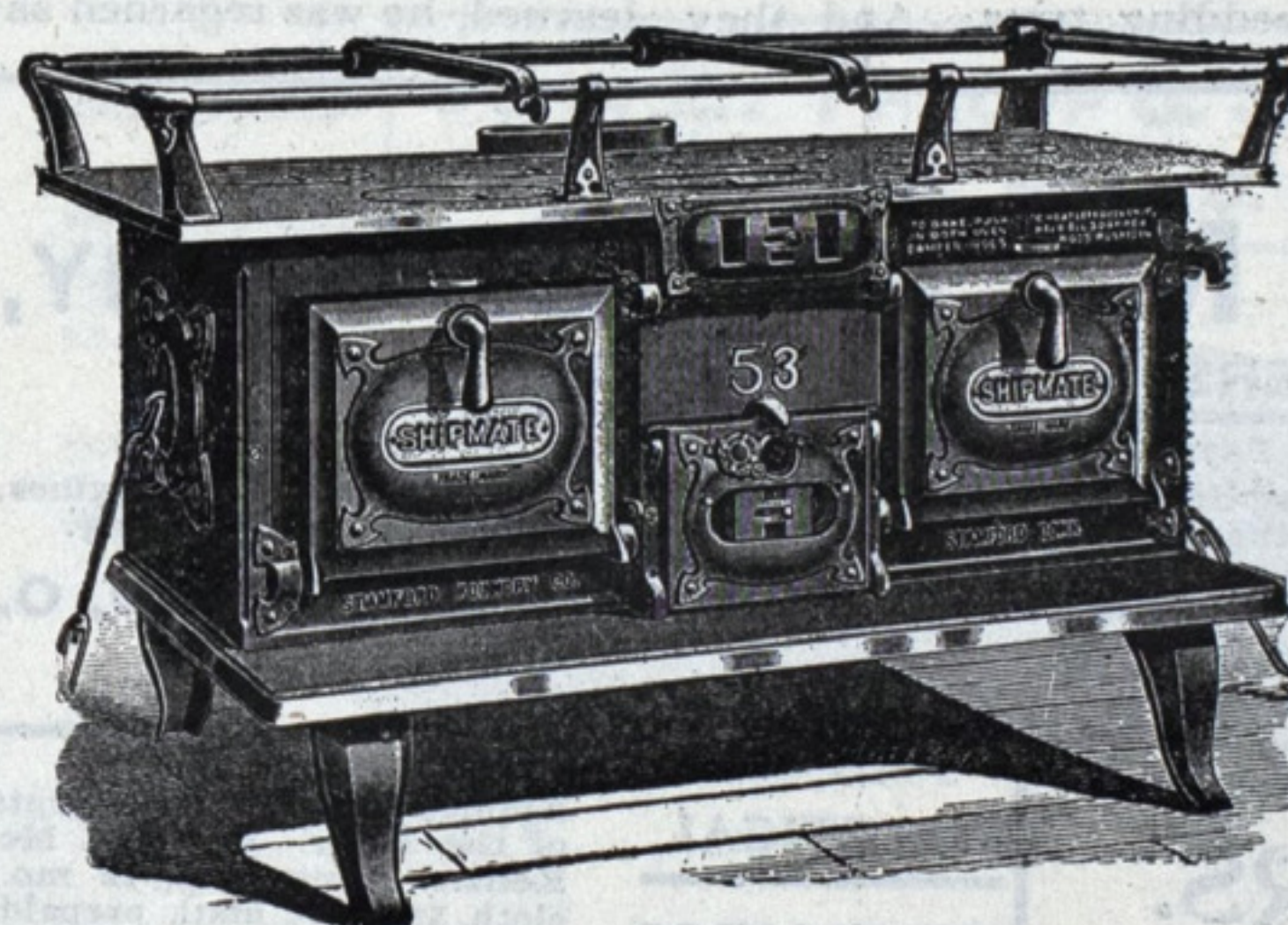
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